

# Antiquity

## A Quarterly Review of Archæology

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VOL. I No. III

SEPTEMBER 1927

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### Editorial Notes

ONLY in very exceptional cases can we lend support in these pages to an appeal for funds, but we gladly do so on behalf of the excavations at UR in Mesopotamia. The importance of the joint work of the British Museum and the Museum of the University of Pennsylvania is not fully realized in this country. It is important primarily because here more than anywhere else in the world the origins of civilized life are to be looked for. We know that UR was a flourishing city three thousand years before Christ ; for, in the first season's work there Mr Woolley found an inscribed foundation-tablet of one of its earliest kings, A-anni-padda, whose father, already known but as a name only, had been suspected of being mythical ! A-anni-padda lived about a thousand years—not less—before Abraham, whose home also was in UR ; and to him A-anni-padda must have seemed a dim and shadowy figure, hidden in the mists of antiquity. Yet actually the stone which he laid as the foundation of his temple and on which he inscribed his name, and a seal with the name of his mother upon it, are among the finds of the recent excavations.



But A-anni-padda himself was preceded at UR by many generations of civilized people. During the last season's work three cemeteries were found, the oldest going back at least as far as 3500 B.C. 'The



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objects from the graves were such as no previous excavations in Mesopotamia have produced, and it was noteworthy that in richness, in quality, and in technique they were better in proportion as they went back earlier in time. Though we have reached the oldest datable strata yet found . . . it is clear that we have to deal with a civilization which, if not already decadent, had at least been in existence for many centuries.' (*Nature*, 23 July). Mr Woolley then describes the amazing gold and silver implements and jewelry found in the graves ; and he concludes by stating that ' the season's work has produced a mass of material, much of it entirely novel, the importance of which for the early history of Mesopotamia it would be difficult to exaggerate. I am glad to say there is every reason to believe that discoveries of no less importance await us next winter.'



The work at UR has been going on every winter since 1922, and Mr Woolley has gathered together and trained a staff of native diggers. (The excellent photographs of seal-impressions reproduced opposite p. 342 were taken by one of his native assistants). The existence of such a trained staff has a capital value which all excavators will appreciate. Further, there has now been uncovered, systematically and with the greatest skill, a larger single area of buildings than has ever been revealed on a Sumerian site ; previous work on other sites has too often been confined to the unsatisfactory method of trial-trenches. Every future season's work is therefore doubly important, for it adds to the completeness of an already coherent ground-plan. In the next number we shall publish an important article by Dr H. R. Hall, Keeper of Egyptian and Assyrian Antiquities in the British Museum. Dr Hall was actually the first, in modern times, to excavate at UR, in 1918-19 ; and he will give a general and authoritative summary of the results achieved by recent excavations. We have also been promised an article by Dr Langdon, who is directing for Mr Weld-Blundell the excavations at Kish on behalf of the University of Oxford and the Chicago Field Museum. Both articles will deal with the thorny question of chronology. We understand that Dr Langdon and Professor Fotheringham will shortly publish, through the Oxford University Press, a book dealing with the system of astronomical dating recently outlined by them.



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We referred recently in these pages to the progressive disfiguration of rural England. The latest area threatened is the immediate neighbourhood of STONEHENGE. It might seem incredible that it should have been seriously suggested to erect a row of bungalows in the Avenue field immediately opposite the old stones, but a tea-shop, complete with flags, has already been built there, and plans are actually in existence for extending waterpipes and drains to the Amesbury road. Readers of ANTIQUITY will need no editorial promptings to support the scheme to thwart this vandalism. It is proposed to buy out the owners of the land, vesting it in the safe-keeping of the National Trust. The appeal has the support of the Prime Minister, Mr Ramsay Macdonald, Viscount Grey of Fallodon, Lord Crawford, Lord Radnor, the members of Parliament for Wiltshire and Mr J. C. Squire, the literary critic and editor of the *London Mercury*, who was closely associated with much of the preliminary organization. So strong a lead will, we hope, be followed by archaeologists all over the world, irrespective of nationality. Subscriptions should be sent to the Secretary of the National Trust, 7 Buckingham Palace Gardens, London, S.W. 1.



Most of the recent literature on the subject of GLOZEL has been devoted to acrimonious controversy. One might imagine that controversy would be confined to the subject of the authenticity of the finds, but not at all. M. Camille Julian and Dr Morlet, to mention only the protagonists, are engaged in a lively dispute as to whether the objects are the stock-in-trade of a Gallo-Roman witch-doctor, or whether they belong to the neolithic period. Much ink has been spilt in the *Mercure de France* over this matter. There are also cross-currents which we confess we are unable to follow altogether, and a good deal of heat has been generated.

But the beginning of the end is in sight !



The 'memorable days of scientific control' have begun in earnest with a visit of Monsieur A. Vayson de Pradenne, a civil engineer. He has published an account of his two visits in the *Bulletin de la Société Préhistorique Française* (June 1927). We shall not repeat at length his opinion of the objects themselves, since this opinion coincides very closely with the views given in our last number. Let it suffice that



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he regards none of them as ancient, with the exception of a few scanty relics connected with the glass furnace. This latter he considers as belonging to a type which remained in use until the end of the 18th century. Monsieur Vayson de Pradenne visited Glozel in June and July of this year, and conducted excavations there. He pays tribute to the sincerity, no less than to the fanaticism, of Dr Morlet's faith. Having arrived on the spot, he dug in the neighbourhood of a trench where antiquities were said to be very abundant. They were indeed : but it was observed that they gave out entirely when the excavations were conducted at a distance from the trench. Whereas a few cubic feet of earth near the trench yielded several engraved pebbles, a much bigger excavation at some distance yielded absolutely nothing. But the most interesting and damning result of Monsieur Vayson de Pradenne's work was his discovery in the soil of a hole of soft earth at the end of which was an engraved pebble. There was no doubt in his mind that this hole was the passage, made from the side of the old trench, through which the pebble itself had been introduced, and Fradin himself admitted that these patches of soft earth were the usual sign that 'antiquities' were coming. It is perfectly plain that the 'Spirit of Glozel,' as Monsieur Vayson de Pradenne delicately describes it, has salted the site pretty thoroughly by this means, and that the objects found have been introduced into the ground in this way. Monsieur Vayson de Pradenne concludes that there is 'great need of further work [like his own] to be carried out at Glozel, in view of the importance with which the matter is attended.' He adds a warning that any such undertaking should be hedged around with every kind of precaution 'since the Spirit of Glozel is undoubtedly ingenious.' If one suspects lateral penetration from a short distance, perhaps the objects will penetrate much further ; perhaps an attempt will be made from above. If local preparation of the ground at short notice becomes difficult, perhaps preparations will be made on a much larger scale. In any case, one must prepare for a serious battle, for the game is worth the candle, and the 'Spirit of Glozel' which has already given fine proof of courage and tenacity will fight desperately before admitting defeat.



We regret that in the first impression of number 1 of ANTIQUITY (p. 114) Mr Mackay was wrongly described as an American, instead of British. The error is corrected in the reprint.







PLATE I



SKYE CROFTER USING THE CASCHROM

*Ph.* H. B. Curwen, 1920

*facing p.* 261



# Prehistoric Agriculture in Britain

by E. CECIL CURWEN

THE importance of the part played by agriculture in the economic history of our country is sometimes apt to be forgotten, for its place has, during the past hundred years, been largely taken by manufacture. Down to the beginning of the nineteenth century the bulk of the population still made a living by tilling the fields, just as their fathers had done from time immemorial. It becomes, therefore, a matter of great interest to trace the beginnings and growth of agriculture in our country before the dawn of history.

Agriculture may be taken in its broadest sense to signify the artificial growth of plants for human use, as opposed to the gathering of wild products, but the term may also be narrowed down to cover only the cultivation of farinaceous seeds which we call cereals. It is chiefly in the latter sense that the subject will be discussed here, but it must be remembered that the nature of the evidence does not altogether allow of such a distinction.

Nature seems to have decreed for man a mixed diet of flesh and vegetable, and there seems no reason to doubt that this has always been so. We know that in ancient times nuts, acorns, and berries formed an important part of his diet, but it remains to be seen at what part of his cultural history the idea occurred to him to grow useful plants near his own door, and more especially those which we class as cereals. From the perishable nature of the evidence it is scarcely possible to say that at any given period agriculture of some sort was *not* practised ; all we can say is that proof exists that it was known as far back as such-and-such an epoch. Such evidence falls into five main classes, viz., that afforded by the discovery of (1) actual grain, (2) sickles, (3) instruments for grinding corn, (4) instruments for breaking the ground, and (5) the actual fields cultivated. Each of these will be discussed in its turn.

## (1) CEREALS

The earliest cereals to be cultivated by man were wheat and barley. In this the testimony of archaeology and of tradition agree. The



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origin of the wheats has been traced with great probability to wild varieties which are still to be found growing in a region which extends from the Balkans through Roumania, south Russia, Asia Minor, Mesopotamia and Palestine.<sup>1</sup> Of these wild grasses the most important is *Triticum dicoccoides*, which still grows in Syria and northern Palestine. Similarly the six-rowed barley of antiquity is derived from a wild variety which has been found growing in the same locality. In the ancient civilizations of Mesopotamia there seems hardly to have been a time when agriculture was unknown, while in Egypt wheat and barley seem to have been introduced by a pre-dynastic people from the neighbouring parts of Asia.<sup>2</sup>

When we turn to tradition we find that not only were wheat and barley said to have been introduced simultaneously into China at the dawn of her history, but the use of the same two cereals was taught to the men of Egypt by the goddess Isis, whose husband Osiris, according to Diodorus Siculus, found them growing wild in the neighbourhood of Nysa in that part of Arabia which is not far from Egypt. In the Homeric hymn to Demeter we learn that it was in the fields of Nysa that Persephone was gathering flowers when she was carried off by Hades, and Pliny identifies Nysa with Scythopolis, the Bethshean of the Bible, a few miles south of the Sea of Galilee. It is in this very district, and, so far as is known, in no other, that the wild prototypes of wheat and barley are still found growing together.

The early connexion between these cereals is also illustrated by the fact that the same Indo-European root seen in the Avedic word *yava* appears in the Greek ζέα, meaning 'wheat,' and in the Persian *djau*, meaning 'barley.'

These facts and traditions all point to the very early evolution of the cultivation of at least two cereals, and probably later of others also, in the lands bordering on the eastern end of the Mediterranean.

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<sup>1</sup> Dr Otto Stapf ('History of the Wheats,' supplement to *Journ. of Board of Agriculture* (June 1910), xvii, 81, thus summarizes this question:—

- (1) *Triticum monococcum*, derived from the wild variety *T. aegilopioides*, found in Asia Minor and the Balkans.
- (2) *T. dicoccum* ('Emmer'), *T. durum*, *T. turgidum*, *T. polonicum* derived from *T. dicoccoides*, found in Palestine and Syria.
- (3) *T. vulgare* and *T. compactum*, derived from an unknown variety probably to be sought in Syria or Mesopotamia.
- (4) *T. spelta* derived from *T. cylindricum*, found in Bulgaria, Roumania and South Russia.

<sup>2</sup> *Guide to Egyptian Coll. in British Museum*, 22.



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How and when did this knowledge spread to Europe, and to Britain in particular?

The art of agriculture seems to have found its way into Europe, along with that of weaving, by way of Troy and the Danube valley, and to have been diffused with the neolithic culture. Evidence of it is found in the earliest Danubian period (c. 3000–2500 B.C.), and wheat and barley have been discovered in the remains of the second period (c. 2500–2000).<sup>3</sup> The contemporary lake-dwellings of Switzerland have yielded no fewer than ten varieties of barley, wheat and millet.<sup>4</sup> Spelt, rye and oats do not appear there until the Bronze Age.

In Britain, grain, probably wheat, has been found in a definitely neolithic site at Rothesay, associated with characteristic neolithic pottery and saddle-queirns. I am indebted to Mr J. Graham Callander for this information and for allowing me to publish it. The next earliest traces consist in the impressions of two grains of wheat in the clay forming the bottom of a 'beaker' belonging to the early Bronze Age (c. 1800 B.C.), found by Mr. James E. Cree, F.S.A. Scot., in a kitchen-midden at Tusculum, North Berwick.<sup>5</sup> Almost as old are three grains of carbonized wheat found in a Yorkshire barrow by Mr J. R. Mortimer, embedded in the side of a food-vessel belonging to Abercrombie's type IA (second period of the Bronze Age),<sup>6</sup> while about two pints of charred wheat were found by Mr J. Graham Callander, F.S.A. Scot., in the Culbin Sands, Morayshire, with what appear to be the remains of a Bronze Age vessel.<sup>7</sup>

When we turn to the sites occupied during the early Iron Age, evidence is more plentiful. Dr Clay found quantities of Emmer wheat and six-rowed barley in the La Tène I villages at Fifield Bavant and Swallowcliffe, Wilts (c. 400–250 B.C.).<sup>8</sup> Mr and Mrs B. H. Cunnington found wheat also in the contemporary site at All Cannings Cross.<sup>9</sup> The Glastonbury lake-village yielded wheat, two varieties of barley,

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<sup>3</sup> V. Gordon Childe, *The Dawn of European Civilisation* (London, 1925), passim.

<sup>4</sup> Keller, *Lake Dwellings of Switzerland* (2nd ed., 1878), i, 518–36. In the ancient literature of Ireland eight varieties of wheat, barley and oats have distinct names; see O'Curry, *Manners and Customs of the Ancient Irish*, i, p. ccclxii.

<sup>5</sup> *Proc. Soc. Antiq. Scot.*, xlii, 288–9.

<sup>6</sup> J. R. Mortimer, *Forty Years Researches in the Burial Mounds of E. Yorks.* (1905),

III–12.

<sup>7</sup> *Proc. Soc. Antiq. Scot.*, xlv, 158–65.

<sup>8</sup> *Wilts. Arch. Mag.*, xlii, 493–4; xliii, 90.

<sup>9</sup> M. E. Cunnington, *All Cannings Cross*, 52, 60.



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and also the Celtic broad bean.<sup>10</sup> Similarly the hill-top and other camps of the early Iron Age have produced wheat and barley, as Worlebury,<sup>11</sup> Hunsbury,<sup>12</sup> Lidbury,<sup>13</sup> and Winklebury.<sup>14</sup>

Mr Callander refers discoveries of wheat at Camphill (Glasgow), Borness Cave (Kirkcudbright),<sup>15</sup> and the crannog in Barhapple Loch (Wigtownshire) to the early Iron Age in Scotland—probably the first few centuries of our era; while barley has been found in the crannog at Erskine Ferry (Old Kilpatrick).<sup>16</sup> A cereal is also mentioned in connexion with a cave at Wemyss (Fife).<sup>17</sup>

As to the period in which the cultivation of oats (*Avena sativa*) was introduced into Britain there is very little evidence. It is believed to have been derived from the wild *Avena fatua*, a native of south Europe and western Asia,<sup>18</sup> and, as is stated above, is first found cultivated in Switzerland late in the Bronze Age. The earliest specimens of oats found in Britain seem to be those discovered by Dr Clay at Fifield Bavant (La Tène I—c. 400–250 B.C.).

Of the northward spread of the knowledge of cereals there is corroborative evidence in the shape of the seeds of the common cornfield weeds which are sometimes found among the grain. In the Swiss lake-dwellings these included the 'Cretan Catchfly' (*Silene Cretica*, L.) and the 'corn blue-bottle' (*Centaurea cyanus*), both of which are natives only of the Mediterranean countries, thus indicating the quarter from which this corn had been introduced into Switzerland.<sup>19</sup>

Unfortunately our knowledge of the early cereals of Britain does not yet extend to the cornfield weeds. Clement Reid says: "In time we shall probably be able to use the weeds of cultivation as we do coins for the dating of antiquities; for each period saw the introduction of new cultivated plants, or new varieties, and with each cultivated plant

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<sup>10</sup> Clement Reid, in *Glastonbury Lake Village*, ii, 628.

<sup>11</sup> Dymond, *Worlebury* (1903), 80.

<sup>12</sup> *All Cannings Cross*, 60.

<sup>13</sup> *Wilts. Arch. Mag.*, xl, 23 (pit 8).

<sup>14</sup> Pitt Rivers, *Excavations in Cranborne Chase*, ii, 229.

<sup>15</sup> *Proc. Soc. Antiq. Scot.*, x, 490.

<sup>16</sup> *Ibid.*, xlv, 164.

<sup>17</sup> *Ibid.*, x, 478.

<sup>18</sup> *Encycl. Brit.*, s.v. OATS.

<sup>19</sup> Keller, *Lake Dwellings of Switzerland*, i, 522, 524.



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is usually introduced the special set of weeds of its place of origin.”<sup>20</sup> This opens up a useful field of enquiry regarding the beginnings of agriculture in Britain.

### (2) SICKLES

The existence of a sickle is evidence of the practice of some form of agriculture.

In the early Iron Age iron sickles are fairly common, and consist each of a curved, hook-like blade, sharpened in the concavity, and mounted by means of flanges beaten round the wooden handle. The length of the blade does not usually exceed eight inches, and may be as little as two and a half inches.

Going back to the Bronze Age we find socketed bronze sickles of much the same general shape as their iron derivatives. Indeed, at Llynfawr a socketed iron sickle was found with a bronze one which was evidently the model for it.<sup>21</sup> Being socketed they are probably late, and this variety is confined to Britain and northern France. The flat kind, which is earlier in point of evolution, is rare in this country, but common in south Europe.<sup>22</sup>

This evidence, then, carries us back to the Bronze Age. Is there any earlier evidence? In a few localities in Britain beautifully worked flint knives with curved points have been found, and it has been suggested with fair probability, though hardly with certainty, that these were used as sickles,<sup>23</sup> for they bear some resemblance to the wonderful crescentic flint knives, serrated on the straighter (concave) edge, which are confined to Scandinavia and north Germany.<sup>24</sup>

But more definite light on this question comes from Egypt, where Sir Flinders Petrie found two sickles consisting of serrated flint flakes set in a curved wooden frame, and belonging respectively to the twelfth and eighteenth dynasties.<sup>25</sup> From these it appears that the characteristic shape of a sickle is derived from that of the jaw-bone of an ox or other animal, and there is some reason to believe that at one time the actual jaw-bone was used for the purpose, the natural teeth

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<sup>20</sup> See A. Bulleid and H. St. George Gray, *Glastonbury Lake Village*, ii, 627.

<sup>21</sup> *Archaeologia*, lxxi, plate ix.

<sup>22</sup> Evans, *Ancient Bronze Implements*, 194-203.

<sup>23</sup> *Guide to the Stone Age*, British Museum (1926), 104-5.

<sup>24</sup> Evans, *Ancient Stone Implements* (2nd ed.), 297.

<sup>25</sup> The information contained in this and the succeeding paragraphs of this section is derived from a paper on early sickles by F. C. J. Spurrell, *Arch. Journ.*, xlix, 53-68.



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being replaced by artificial ones of flint. Such serrated flints are found in Egypt dating from the earliest times up to the Roman period, and some thick and clumsy ones, which had probably been set in an actual jaw-bone, were found in the Amorite and early Hebrew strata of the ruins of Lachish (Tel-el-Hesy) in Palestine.<sup>26</sup>

One characteristic of these serrated flakes which is constant (except in presumably new and unused specimens) is the polish which extends along both sides of the serrated edge as far as the line where the flint is protected by the cement whereby it was fixed to the wooden frame. Mr F. C. J. Spurrell, who studied this question very exhaustively, made experiments with similar serrated flakes, and found that prolonged sawing of bone, horn or wood failed to produce any polish on the flint used, but that such polish was acquired by the lengthened cutting of ripe straw, owing to the presence of organic silica in the latter. This is an important observation because it enables us to say with certainty that any serrated flint with a polished edge was used for cutting stalks—presumably corn, but possibly other grasses. Such polish is actually found on the straighter (concave) edge of the Scandinavian crescentic blades alluded to above.

Serrated flint flakes, similar to those of Egypt, have been found in all five prehistoric cities at Hissarlik (Troy), also in Irak and Macedonia. Moreover, two fragments of what look like wooden sickles bearing flint teeth have been found in the lake-dwellings of Switzerland<sup>27</sup> and Italy.<sup>28</sup> When, therefore, such flakes are found in Britain, a polished edge should be taken as an indication that the specimen formed part of a sickle. Examples of these flakes, a large proportion having polished edges, come from the barrows of Yorkshire and elsewhere,<sup>29</sup> and are presumably to be assigned to the early Bronze Age. If such sickles were used in the neolithic period here, as they were elsewhere, they are unfortunately indistinguishable from the Bronze Age specimens, but flakes with polished and serrated edges abound in the late neolithic camp on Windmill Hill, near Avebury.

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<sup>26</sup> For flint sickles from Palestine see Prof. R. A. S. Macalister, *A Century of Excavation in Palestine* (1925), 232, and p. 308 of this number of ANTIQUITY.

<sup>27</sup> At Vinelz (Bienne); *Mitt. der Ant. Gesellschaft, Zurich*, xxii, pl. xvii, f.3.

<sup>28</sup> Munro, *Lake Dwellings of Europe*, fig. 67, no. 12. Dr Munro does not agree that the Swiss specimens are sickles—see *Arch. Journ.* xlix, 164-75.

<sup>29</sup> Evans, *Anc. Stone Impl.*, 295; Greenwell, *British Barrows*, 262.



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### (3) IMPLEMENTS FOR GRINDING CORN <sup>30</sup>

A rock-basin in which a round or elongated stone could be worked is a form of pounding-apparatus that goes back to a very great antiquity, and is one which served primarily to pound nuts, acorns, or other similar objects. When corn first made its appearance it was probably treated in the same manner—pounded, rather than ground. The next step in development was the introduction of an instrument more suitable for grinding corn, which acted by rubbing rather than by pounding. This is the ‘saddle-quern’,<sup>31</sup> an instrument in which a smaller stone is rubbed backwards and forwards on a larger, and which first appears in Britain towards the close of the neolithic period. While the older rock-basin continued in use for other purposes,<sup>32</sup> and ultimately developed into the modern pestle and mortar, this new instrument seems to have been invented and exclusively used for the purpose of grinding corn. Its presence, therefore, in any epoch, is an indication that agriculture was known and practised.

In Egypt as early as 2300 B.C. we have models representing a girl grinding corn on a saddle-quern, in a kneeling posture, and alternately pushing the upper stone from her, and drawing it towards her. This will illustrate the propriety of the preposition in the phrase—“the maidservant that is *behind* the mill” (Exod. xi, 5).<sup>33</sup>

In our own country the earliest specimens were found by Mr Alexander Keiller in the neolithic hill-top camp on Windmill Hill, Avebury,<sup>34</sup> and by Major Wade deep down in the shaft of a neolithic flint-mine at Stoke Down, Chichester.<sup>35</sup> The presence of these specimens is sufficient to indicate that agriculture was known and practised at this date. In the museum at Devizes, Wilts., is another specimen from a long barrow on Oldbury Hill,<sup>36</sup> and yet another

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<sup>30</sup> Much of the material contained in this section is derived from Richard Bennett and John Elton, *History of Corn-milling* (London and Liverpool, 1898), i, chaps. i-v.

<sup>31</sup> So named in common parlance, though the term ‘quern’ is probably only strictly applicable to the rotary variety.

<sup>32</sup> Mortars continued to be used for corn, along with saddle-querns right down to Pliny’s time, and are still in use in Africa and India. Cf. Numbers xi, 8; Ovid, *Fasti* vi, (*‘Cereris cava machina’*); Columella, *R.R.* 12,55; Pliny, *N.H.* 18,23; etc.

<sup>33</sup> Just as we call the lower stone a ‘saddle’ from its shape, so the ancient Hebrews called the upper stone a ‘rider’ (*rekhebh*).

<sup>34</sup> Referred to here by Mr Keiller’s kind permission.

<sup>35</sup> *Proc. Prehist. Soc. E. Anglia*, iv, fig. 2, p. 86

<sup>36</sup> *Devizes Museum Catalogue*, pt. ii, 24 (x 96 A).



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found with a 'beaker' at Winterbourne Monkton,<sup>37</sup> dating from the beginning of the Bronze Age.

Saddle-querns continued to be used in Britain right up to the Roman period, and are still used by the natives of Central Africa, South America and Mexico. But at about the end of the La Tène I period (c. 250 B.C.) the rotary quern first makes its appearance in this country, the earliest specimens coming from Dr Clay's excavation of the La Tène I village at Fifield Bavant, Wilts, where they formed a minority of one to ten among saddle-querns.<sup>38</sup> Thereafter in the other excavated sites rotary querns become more and more predominant, until at Glastonbury (La Tène III, c. 100–1 B.C.), they form a majority of two to one.<sup>39</sup> Those of the early Iron Age are conical, or beehive-shaped; the Romans seem to be responsible for the introduction of the flat, discoidal variety which survived in use in the Hebrides down to the last century.

### (4) INSTRUMENTS FOR BREAKING THE GROUND

From the nature of the case the origin and history of the plough in these islands is obscure, and yet it is one of the most important branches of the study of our ancient agriculture, because on the type of plough used depend the shape and characteristics of the field ploughed.

Plough-shares of the early Iron Age and Roman period are not uncommon, and consist of a simple metal point designed to fit on to the share-beam, without any device for undercutting and turning over the sods. Such a plough simply scratches a groove in the soil, throwing up a very small upcast on each side, most of which falls back into the furrow. Coulters were used in the Roman period, and Wright figures a model of a Romano-British ploughman using a simple plough of this kind drawn by two oxen.<sup>40</sup>

Of the ploughs of the Bronze Age we have little direct knowledge; a bronze plough-share was found at Holderness, but from its shape one is inclined to doubt whether it can be attributed to the Bronze Age. Stones, however likely, can scarcely be admitted as evidence without definite proof. But that stones were used for a similar

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<sup>37</sup> *Ibid.* (x 95).

<sup>38</sup> *Wilts Arch. Mag.* xlii, 478–9.

<sup>39</sup> *Glastonbury*, ii, 609.

<sup>40</sup> Wright, *Celt, Roman and Saxon*, 209.

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purpose in the neolithic period in central Europe is inferred from the frequent discovery of 'shoe-last celts,' which, it is thought, were used as hoes in breaking up the ground.<sup>41</sup> A rock-carving at Bohuslän in Sweden, attributed to this period, depicts a man ploughing with two oxen,<sup>42</sup> and another in the Alpes Maritimes shows a similar plough and team followed by a harrow also drawn by two oxen. The latter is attributed to the beginning of the metal age.<sup>43</sup>

When did the plough, properly so-called, first appear in Britain, and what kind of implement had previously been used for the same purpose? The Swedish plough of the Bronze Age, alluded to above, is the earliest of its kind of which we have knowledge in northern Europe, and we can believe that its introduction into this country would be a gradual process—a process which, strange to say, is not yet complete. In the island of Skye and in the Hebrides is still to be found a very primitive form of implement, called a *caschrom* or foot-plough, with which the crofters drive their furrows without the aid of horse or ox. This instrument, of which the Gaelic name means literally 'bent foot,' consists of a stout curved handle, some  $5\frac{1}{2}$  feet long, set at an angle of  $120^\circ$  into a foot-piece nearly 3 feet long, the point of junction of the two parts being strengthened and made absolutely rigid. Into the right hand side of this angle is set a peg for the crofter's foot, and the toe of the implement is shod with a rough iron point, not unlike the plough-shares of the early Iron Age.

The method of use is as follows: the crofter drives the foot-piece obliquely into the ground by means of a double jerk of his foot upon the peg (plate 1). Then by depressing the handle he levers up the sod, contriving at the same time to turn it over to his left. Finally he takes a step backwards and repeats the process, thus making a continuous, if somewhat wavy, furrow the whole length of his plot.<sup>44</sup> In this way a man reckons to 'plough' about a tenth of a Scots acre in a day—about twice as much as he would be able to do with an ordinary spade or fork.

That some such instrument as this was in general use in Britain and western Europe before the introduction of the traction plough<sup>45</sup>

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<sup>41</sup> Childe, *Dawn of European Civilisation*, 172, 177, etc.

<sup>42</sup> M. C. Burkitt, F.S.A., *Prehistory* (Camb.) 1921, pl. xlii.

<sup>43</sup> *Congrès internat. d'Anthr. et d'Archéol. préhist.*, 1874, i, 454 (fig. 1), 473 (fig. 31); also Burkitt, *Our Early Ancestors*, 54n, and pl. xxviii, fig. 1.

<sup>44</sup> See *Stat. Acc. Scotland*, vi, 288–9 (1793).

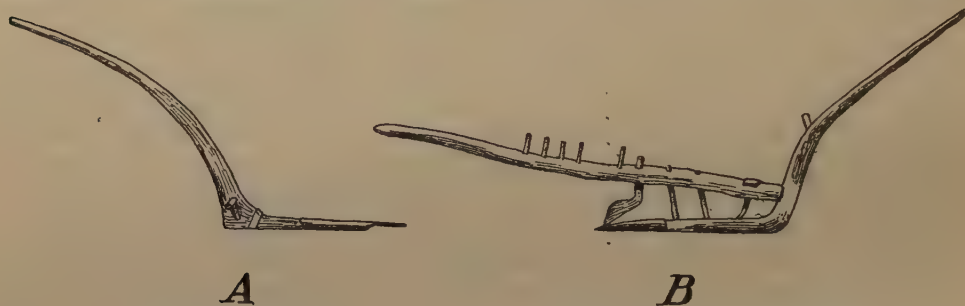
<sup>45</sup> That is, a plough drawn by animal labour.



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seems to be indicated by the following evidence gathered from Brittany, Somerset and Wales.

(1) In the Pitt-Rivers museum at Farnham is preserved an old Breton plough, which consists of nothing else than a caschrom fitted with a beam and coulter for traction by oxen. That this kind of plough was produced by adaptation of the caschrom can hardly be doubted when the two instruments are seen side by side, especially when it is noticed that even the peg is preserved, albeit moved further up the handle to provide a grip for the right hand instead of for the foot (figs. A and B). This seems to indicate that the caschrom was at one time used



A. CASCHROM FROM SKYE

B. OLD PLOUGH FROM BRITTANY

in Brittany. A very similar plough is said to be figured on a Roman tombstone.<sup>46</sup>

(2) An oak foot-plough, not unlike the caschrom, was found in the lake-village at Glastonbury.<sup>47</sup> This belongs to the latter part of the early Iron Age.

(3) In that curious collection of Welsh tradition, known as the "Triads of the Isle of Britain" occurs the following remarkable information: "Elldud, the holy knight of Theodosius, [was one of the three benefactors of the Cambrian nation because he] improved the mode of ploughing land and taught the Cambrians better than was known before, and he gave them the system and art of cultivating lands as is used at present; for before that time land was cultivated only with the mattock and over-tread plough (*arad arsang*), after the manner of the Irish (*Gwyddelod*)."<sup>48</sup>

<sup>46</sup> Meitzen, *Siedelung und Agrarwesen der Germanen*, i, chap. iv, fig. 30.

<sup>47</sup> *Glastonbury Lake Village*, i, 348.

<sup>48</sup> Probert, *Ancient Laws of Cambria*, 396, Triad no. 56.

## PREHISTORIC AGRICULTURE IN BRITAIN

Whatever view may be taken of the date and historical trustworthiness of this compilation—and at least one statement in this triad (not included in the above excerpt) is the reverse of the truth—it is not easy to see how this reference to former methods of cultivation can be anything but a genuine folk-memory. The “over-tread plough” (Welsh, *arad arsang*) means literally “plough of the instep,” or “tread-plough,” an apt description of the caschrom, and it appears that at the time that this triad was committed to writing such an implement was still used by the Irish—or the Goidels—even as it is today by the Goidelic people of the Hebrides. What was the precise improvement said to have been introduced by Elldud is not stated, but we may infer that it was the two-ox traction plough. We are not, however, bound to believe that this was not introduced into Britain till the fifth century of our era, though that may perhaps have been true of Wales, the more so as the traction plough did not evict the caschrom from the western shires of Scotland till the eighteenth century, and has not even yet done so in the remoter islands.

These facts and traditions seem to point to an instrument resembling the caschrom having been in very general use in western Europe, while its supersession by the ox-drawn plough was a gradual process, not even yet complete, which, as far as Britain is concerned, probably began in the south-east and spread slowly to the more distant parts. As to when this improvement began, there is as yet no evidence, but the foot-plough had apparently not disappeared from Somerset by the first century before Christ.

In the above-quoted triad the reference to cultivation with the mattock carries us back a step further still to an implement which, developmentally, must have preceded the caschrom, if the analogy of modern primitive tribes holds good. Most African tribes, if uninfluenced by European methods, break up the ground with an implement resembling a mattock or hoe, or with a simple digging-stick. This is undoubtedly the most primitive means, and it is from the digging-stick that the caschrom has evidently been developed. An interesting link in this chain of evidence is furnished by a Sudanese implement which is in fact a caschrom made in one curved piece, instead of with an angle.<sup>49</sup> The foot-peg is the same, and the method of use must be identical.

That such hoes were actually used by the neolithic people of central

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<sup>49</sup> A specimen is to be seen in the ethnological collection at the Brighton museum.



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Europe is suggested by the frequent occurrence of 'shoe-last celts' in deposits of that period, and Pliny tells us that even in his day some mountain tribes still "ploughed" without oxen, using a sort of hoe.<sup>50</sup>

The fundamental difference between the mattock, hoe, or digging-stick on the one hand, and the caschrom on the other, is that while the former implements break up the ground irregularly, the latter produces a definite furrow. This is an important point, as will be seen in the next section.

While in some cases, as in Brittany, the traction-plough may have originated in the adaption of the caschrom, this may not have been the case everywhere. The Bronze Age rock-carvings alluded to above, as well as various Roman ploughs figured by Meitzen,<sup>51</sup> give the impression that the common traction-plough may have arisen from a kind of hook dragged through the ground—such a hook as can easily be made of a forked branch of a tree, of which the longer limb formed the beam to which the oxen were attached, the shorter limb the share-beam, and the stem the handle. From its shape one would judge that this type had been derived from the hoe such as is figured in Egyptian hieroglyphs, and is seen in use today in central Africa. Indeed, the development of the plough from the hoe has actually been observed in South Sweden in comparatively recent times, an intermediate form consisting of a large hoe dragged through the ground by man-power.

### (5) ANCIENT CORN-PLOTS AND FIELDS

In the effort to prove that the customary acres, which characterized the open-field system prevailing in England during the middle ages, were derived from a Roman or pre-Roman source, much has been written that would not have been written, had the study of the subject been transferred to the field at the point where documentary evidence fails us. The English open-field system, with its statute acres and customary acres, has been fully described by various writers, and is well known. The English acre, which in its statute form had a length ten times its breadth, and consequently a furrow of 660 feet and a breadth of 66 feet, has been satisfactorily traced back to the early part of the Saxon period, but not further, at any rate as far as Britain is concerned (plate III and fig. 17).

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<sup>50</sup> Pliny, *N.H.* xviii, 49.

<sup>51</sup> Meitzen, *loc. cit.*





PLATE II

NORTH



PREHISTORIC CELTIC FIELDS, WINDOVER HILL, SUSSEX (6 INCH O.S., LXXIX, NE)  
APPROXIMATE SCALE: 1 INCH TO 150 FEET

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PLATE III



TYPICAL ENGLISH ACRE-STRIPS, WINSPIT BOTTOM, NEAR WORTH MATRAVERS, PURBECK

*Ph.* Flight-Lieutenant Drudge, M.C., no. 10 group H.Q., Lee-on-Solent

*Reproduced by permission of the Air Council and H.M. Stationery Office*

*facing p. 272*





## PREHISTORIC AGRICULTURE IN BRITAIN

On the chalk hills of the south-east of England the relics of terrace cultivation, in no wise resembling the arrangement of the English open-field system, are everywhere to be found (contrast figs. 1-7 with fig. 17, and plate II with plate III). The first person to point out the utter dissimilarity of these fields to the medieval English fields was Mr Reginald Blaker, of Lewes,<sup>52</sup> and he was followed not long after by Mr Herbert S. Toms of Brighton,<sup>53</sup> who has given a great deal of attention to the question. Since the war the matter has been definitely settled by air-photography, by which means Mr O. G. S. Crawford has mapped large areas of these ancient cultivations, and shown them to be the actual fields cultivated during the early Iron Age and Roman period (plates II, IV, V).<sup>54</sup> Working at the same time and on the ground the present writer, in conjunction with Dr Eliot Curwen, F.S.A., studied the same question on the South Downs in Sussex, and came independently to identical conclusions.<sup>55</sup>

These ancient cultivations owe their preservation to the fact that when (by ploughing) the turf is removed from an area of ground, and the soil is disturbed, there is a tendency for the latter to travel downhill and to form an accumulation at the lower edge of the plot at the expense of that at the upper edge. Such an accumulation, even on a very moderate slope, becomes in time a very marked bank, which is called by various names, the commonest of which are 'lynchet,' 'lynch,' or 'balk.' For the sake of convenience one may speak of the accumulation of soil along the lower edge of a field as a 'positive lynchet,' and the scarp formed by the removal of soil from the upper edge of the field as a 'negative lynchet.' It will thus be readily seen that, when there is a series of fields one above the other, which were originally separated by narrow strips of unploughed turf to prevent the soil travelling down from one field to another, the intervening lynchets will each consist of a positive element superadded to a negative. This is made evident whenever sections of such lynchets are exposed by excavation (see fig. p. 274). It is necessary to realize that such terraces have not been formed intentionally, but are the result of ploughing; and, conversely, that apart from disturbance of the soil, including the removal of the turf, such lynchets cannot form. The presence, therefore, of lynchets in

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<sup>52</sup> *Sussex Arch. Coll.* xlv, 198-203.

<sup>53</sup> *Antiquary*, Nov. 1911, 411-17.

<sup>54</sup> *Geograph. Journ.* lxi, 342-66; *Air-Survey and Archaeology* (Ordnance Survey Professional Papers, N.S., no. 7, 1924).

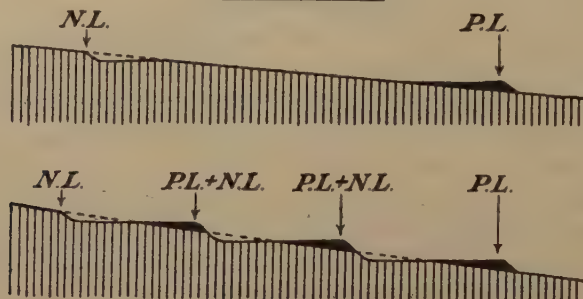
<sup>55</sup> *Sussex Arch. Coll.* lxiv, 1-65.



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connexion with a plot of ground amounts to proof positive that the surface of such a plot has been cultivated. The importance of this point will appear later.<sup>56</sup>

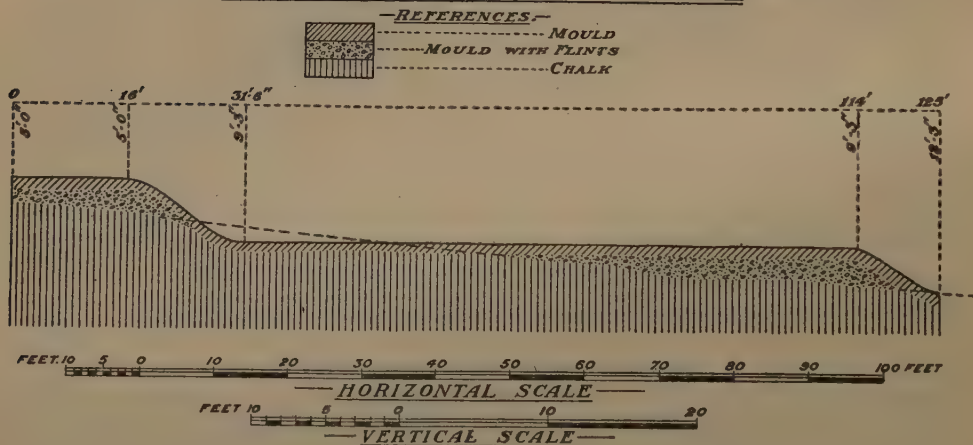
### —LYNCHETS.—



### —REFERENCES.—

*P.L.* Positive Lynchet.  
*N.L.* Negative Lynchet.

## —SECTION THROUGH LYNCHETS ON— —THUNDERSBARROW HILL—



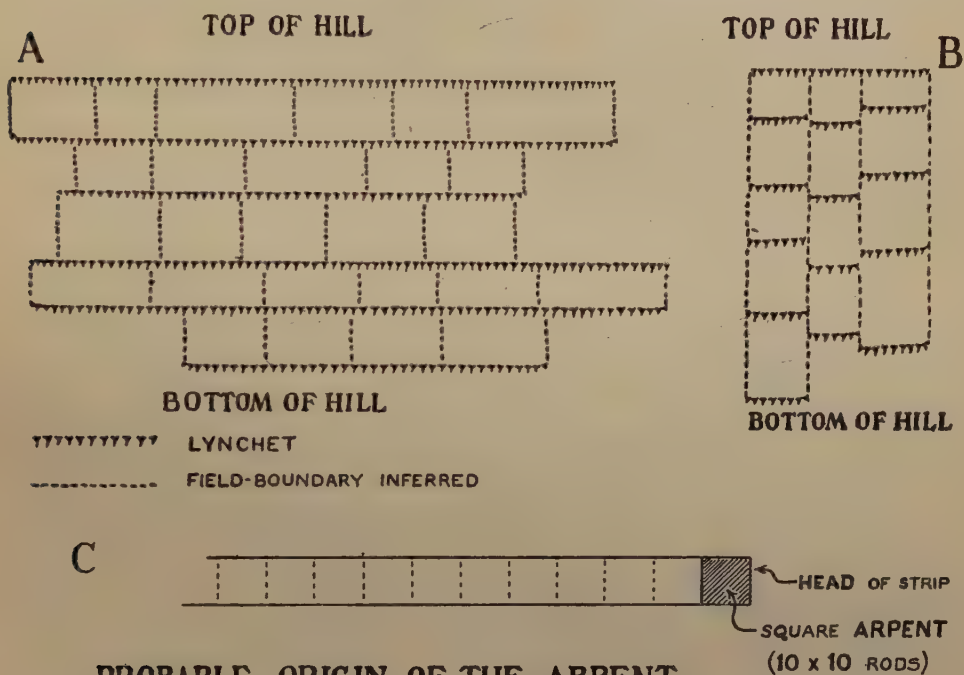
The lynchet-fields of the chalk hills of s.e. England fall into two main classes : (1) long, narrow, *co-terminous* strips, roughly corresponding to the statute English acre or half-acre (viz. 660 by 66 or 33

<sup>56</sup> For a discussion of the process of lynchet-formation in greater detail see the paper referred to in the last note.

## PREHISTORIC AGRICULTURE IN BRITAIN

feet) ; these fields are medieval or fairly recent ; and (2) fields which bear no resemblance to the English acre, but which are found invariably to antedate any medieval structures and sometimes also Roman remains with which they may come into relation, while they are organically connected with the sites of early Iron Age or Romano-British settlements. These fields belong to what is now called the Celtic type,

### DIAGRAMS ILLUSTRATING TYPES OF CELTIC FIELDS

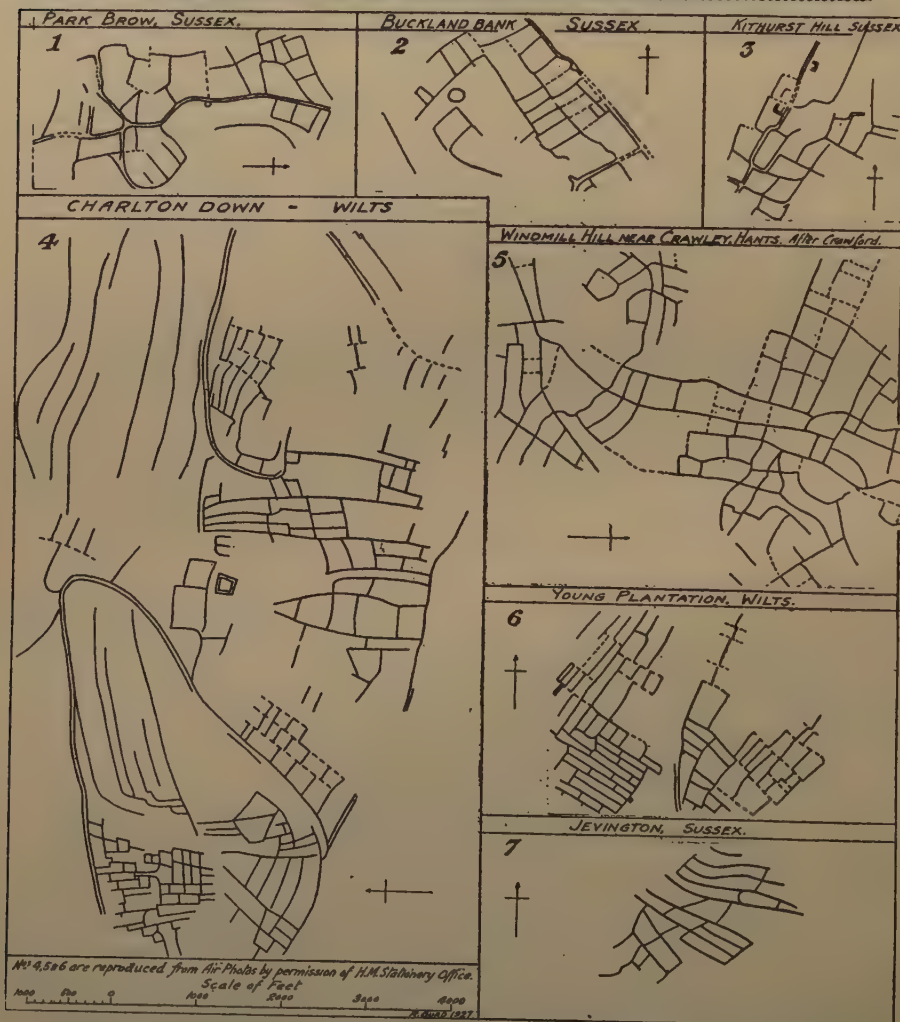


### PROBABLE ORIGIN OF THE ARPENT

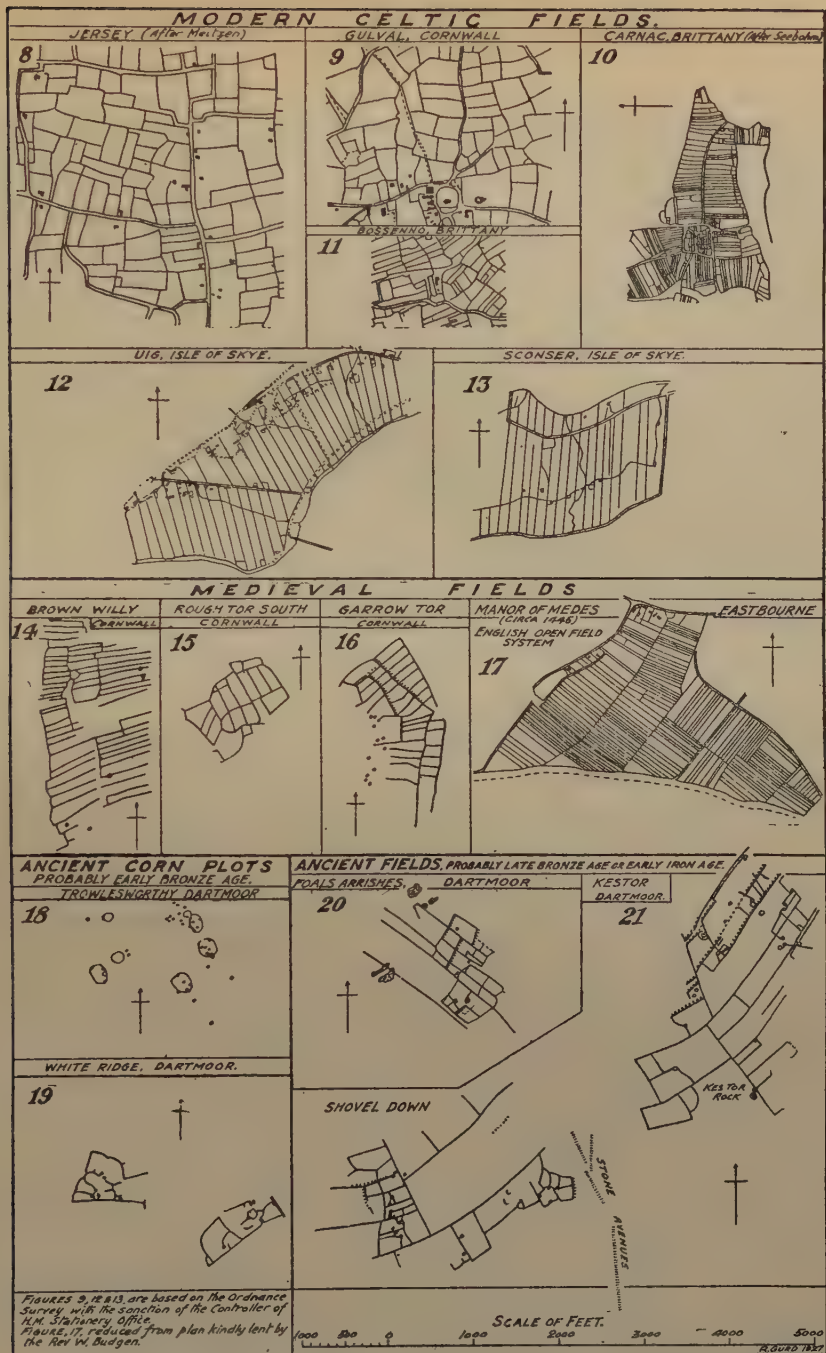
though in reality they do not conform to one type but to three, the differences probably not being fundamental as they are apt to merge into one another :—

(a) Long strips running parallel to the contours, of indefinite length, and of breadth varying from 100 to 300 feet, but commonly between 120 and 240 feet. They are *not coterminous* with adjacent strips, and they often show signs of having been *transversely* divided





FIGS. 1-7. PREHISTORIC CELTIC FIELDS OF SOUTH-EAST BRITAIN, WITH DIAGRAM ILLUSTRATING THE EVOLUTION OF THE PLOUGH



FIGS. 8-21. MODERN CELTIC, MEDIEVAL, AND BRONZE AGE FIELDS FOR COMPARISON AND CONTRAST



## ANTIQUITY

into squarish or oblong areas, though such divisions, not being lynched (owing to their running at right angles to the contours), are, more often than not, difficult to trace (see diagram, A). An example of this type may be seen in the top left-hand corner of fig. 4.

(b) Similar long strips, but running at right angles to the contours, i.e., up and down the hill, of similar dimensions and likewise transversely divided into squarish or oblong areas. In this case the fall of the ground causes only the transverse divisions to form lyncheds, the divisions between the strips being practically invisible (diagram, B). An example of this type may be seen in the right-hand half of figs. 4 and 6.

(c) Similar squarish or oblong areas, but fitted into one another irregularly, and not in long rows as in the first two classes. This type may prove to be characteristic of the Roman period. Good examples are shown in figs. 2 and 3.

In all these three types the ultimate field is squarish or oblong, varying from 100 feet square to 300 by 200 feet, or 400 by 150 feet. Rarely is the length of any one plot more than about 400 feet, or the breadth less than 100 feet, though the area is commonly between  $\frac{1}{2}$  and  $1\frac{1}{2}$  acres. They are almost always rectangular and their boundaries rectilinear, except where the nature of the ground necessitates a curve or other irregularity. In figs. 1-21 are shown the outlines of various types of fields—ancient Celtic, modern Celtic,<sup>57</sup> and medieval English—all drawn to the same scale for comparison and contrast.

There is a further fundamental difference between this field-system and that introduced by the Saxons. The former was a hill-system, the latter a valley-system. The Britons were a hill-folk, dwelling on hill-tops, from which their fields spread down into the valleys. The Saxons, on the other hand, were a valley-folk and laid out their fields in such a way that they radiated out from their valley homes and crept up into the hills. Mr Crawford has clearly shown this difference in the distribution of village-sites in Wilts by means of two plans,<sup>58</sup> and

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<sup>57</sup> Fig. 12 shows the holdings of the crofters at Uig, Isle of Skye, and reveals a type of field suggestive of type (b) of the prehistoric Celtic fields. For the following description I am indebted to the factor, Mr MacCallum (through the kindness of the Rev. D. A. Macdonald of Kilmuir):—"The holdings are laid out in long strips of, say, 400 yards, and each holder's house is generally situated at the end of his holding. Each strip is transversely divided into 4 or 5 divisions, according to the rotation shifts carried on by each holder, e.g., a holder carrying out a four-shift rotation has his strip of land divided into 4 plots—(1) corn; (2) potatoes and turnips; (3) young grass, and (4) second year's grass."

<sup>58</sup> *Air-Survey and Archaeology*, 8, 9.

# PLATE IV

NORTH



PREHISTORIC CELTIC FIELDS, FORE DOWN, NR. EASTBOURNE  
(6 INCH. O.S., LXXIX, NE) APPROXIMATE SCALE : 1 INCH TO 190 FEET

*Reproduced by permission of H.M. Stationery Office*

*facing p. 278*





## PREHISTORIC AGRICULTURE IN BRITAIN

the same difference is even more marked in Sussex where the Saxons left the Downs almost entirely uninhabited after exterminating the British population at the siege of Anderida, and themselves settled in the forest of the Weald, on the coastal plain, and in some of the larger valleys of the Downs. The writer is unacquainted with a single British settlement in Sussex situated in the bottom of a valley,<sup>59</sup> while English manors situated on hills are the exception rather than the rule.

These distinctions are fundamental, and of the highest importance in archaeology, for once the characteristics of the Celtic field-system are realized they provide a useful date-standard by which to judge the roads and earthworks with which their lynchets may happen to come into relationship. Thus lynchets of this system are sometimes found to be older than hill-top camps, as is the case at Cissbury,<sup>60</sup> and sometimes contemporary, as at Woolbury and Lidbury.<sup>61</sup> Lynchets, too, which ante-date a small Romano-British barrow near Brighton are contemporary with a very fine stretch of long-disused road.<sup>62</sup>

In air-photographs the outlines of Celtic fields can be traced even where the lynchets have been destroyed by modern ploughing. This is because the chalk of which the lynchets were largely composed forms whitish lines which contrast with the darker soil of the modern field. Very complex pictures are sometimes revealed by this method—Celtic fields overlaid by English acre-strips, and these in turn, perhaps, by more recent ploughing.

The outcome of this is a very practical illustration of the completeness of the hiatus caused by the Saxon Conquest, at any rate in the south-east of Britain, and it emphasizes the fact that the long English strip-acre, whatever its origin, was not native, but was introduced by the Saxons.

In his monumental work on customary acres Seeböhm has shown that the 1 by 10 acre-strips, and their close relatives the 1 by 5 strips, seem to have originated in the corn-lands at the mouths of the Po and of the Danube, and to have stretched thence across Switzerland and northern France to Britain, leaving on either side of them areas where square or oblong acres still hold the field. In contrast to these Mr J. Pelham Maitland has very kindly furnished the writer with particulars

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<sup>59</sup> Late Celtic *towns* are sometimes found in valleys by a river, *e.g.*, London, Canterbury and Winchester.

<sup>60</sup> *Sussex Arch. Coll.* lxvii, 74–76.

<sup>61</sup> Information of Mr Crawford.

<sup>62</sup> *Brighton and Hove Archaeologist*, no. 3 (1926), 35.



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of the lynchet-fields of the Somme district in Picardy. This system seems to belong to the type (a) of the Celtic system described above ; it tends to centre round the great hill-forts (*oppida*), and some of the lynchets are pre-Roman, for at Bouvincourt in the canton of Gamaches, is a series of lynchets (French, *rideaux*) which is cut through by the Gallo-Roman road running between Amiens and Eu.

What then is the origin of these strip-acres of which the English system affords an example, and which seem to have come to us from the corn-growing regions of south Europe ?

The shape and size of any field is governed more than anything else by the type of plough used in cultivating it. We have already seen how the ordinary Roman and British ploughshare merely scratched a shallow groove in the soil—a most ineffective way of aerating it. In view of this Pliny and Vergil<sup>63</sup> tell us that every field ought to be ploughed both longitudinally and transversely, the better to loosen and break up the soil. In order to make such cross-ploughing possible the Roman 'acre' (*jugerum*) was broad in proportion to its length, and had a furrow only 120 feet long, which was considered long enough for two oxen at a single draught. Pliny, however, tells us that there *was* a type of ploughshare which had a broad blade which undercut the sods and turned them over as our modern ploughs do.<sup>64</sup> This kind is mentioned in connexion with Rhaetia, and may well have been a south German invention. The effect of such a plough would be to do away with the need for cross-ploughing, and so a lengthening of the furrow at the expense of the width of the acre was made possible, thus saving time lost in unnecessary turning of the plough.<sup>65</sup> To make a longer furrow possible a larger team of oxen is necessary so that they may not be exhausted, and in this way we see a probable origin of the long strip-acre and the eight-ox plough-team which forms such a contrast to the two-ox team of the Greeks, Romans and Celts.<sup>66</sup>

In the process of time this type of acre was carried across northern France and introduced by the Saxons into Britain, where it seems to have supplanted the Celtic system not only in the parts conquered by

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<sup>63</sup> Pliny, *N.H.* xviii, 49, 4 ; Vergil, *Georg.* i, 97, 98.

<sup>64</sup> Pliny, *N.H.* xviii, 48.

<sup>65</sup> See Meitzen, *Siedelung und Agrarwesen*, i, 272-84.

<sup>66</sup> Meitzen (*loc. cit.*) considers that the word 'plough' with its cognates, which are only found in the Teutonic languages, strictly refers only to this type of implement, which Pliny tells us was called *plaustratum*, a name whose non-latinity is sufficiently indicated by the efforts of copyists to explain it.





PLATE V

NORTH



PREHISTORIC CELTIC FIELDS, JEVINGTON, NR. EASTBOURNE  
(6 INCH O.S., LXXIX, NE). APPROXIMATE SCALE : 1 INCH TO 210 FEET

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*facing p. 281*

## PREHISTORIC AGRICULTURE IN BRITAIN

the Saxons, but the eight-ox team and the long acre seem to have found their way into Wales, Scotland and Ireland, and to have formed an integral part of the tribal systems there, with the communal ploughing that was practised.<sup>67</sup>

So much for the Celtic and Saxon systems. What were the fields of the Bronze Age like? There is very little evidence to show that any of the lynchets of the chalk hills go back to this period. Mr Toms, however, has shown that there are some lynchets antedating the rectangular earthwork enclosure known as South Lodge camp (Cranborne Chase), which was excavated by General Pitt Rivers and attributed to the late Bronze Age. He has also pointed out reasons for believing that some very reduced lynchets antedated the late Bronze Age work known as the Angle Ditch.<sup>68</sup> But for the most part the cultivation of the chalk hills in early Iron Age times was so intensive that traces of earlier cultivation would be little likely to survive.

We are bound, therefore, to seek elsewhere for traces of what we want, and we fortunately find in Dartmoor a very wide field of research. Dotted all over the moor are little groups of hut-circles forming villages and hamlets of very varying plan. Some years ago the Dartmoor exploration committee of the Devonshire Association did noble service in excavating several of these sites, undaunted by the very disappointing paucity of results. Very little was found in most of the huts, but such as was found seemed to point to their having been occupied from the beginning of the Bronze Age, and little, if anything, could be assigned to the early Iron Age. None of the huts show evidence of tin-working and many, while containing charcoal, cooking-stones, and worked flints, yielded no pottery at all. They are associated with round barrows, two of which have been found to contain beakers.<sup>69</sup>

Some of these groups of hut-circles are surrounded by roughly circular enclosing walls, others lie unenclosed on the open moor, while others again have numerous small walls enclosing irregular spaces between the huts. A fourth kind is integrally associated with more or less rectangular enclosures arranged in rows. A close examination shows that a slight, but very definite, degree of lynchetting is to be found in some, but not all, of these enclosures. This, as was emphasized

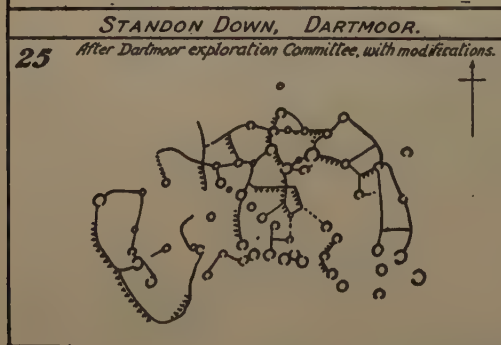
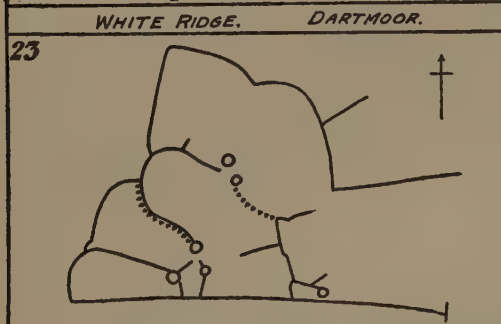
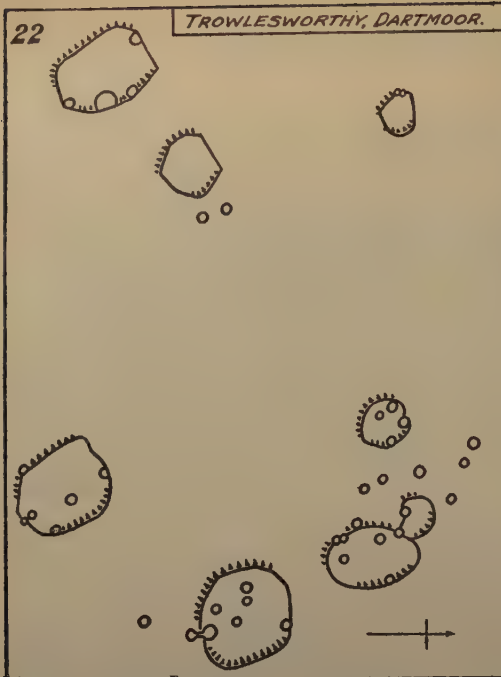
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<sup>67</sup> When oxen are used for ploughing in Sussex at the present day, six beasts are yoked in three pairs.

<sup>68</sup> *Proc. Dorset N.H. and Antiq. Field Club*, xlv, 89. See also Pitt Rivers, *Excavations in Cranborne Chase*, iv, 3-17; 102-13.

<sup>69</sup> *V.C.H. Devon*, i, 358-60.





FIGS. 22-25. EARLY BRONZE AGE CORN-PLOTS

## PREHISTORIC AGRICULTURE IN BRITAIN

above, is a certain sign of the ground having been disturbed by agriculture. By far the most elaborate and finished set of such rectangular fields is to be seen close to Kes Tor (or Castor) rock, Batworthy, near Chagford (fig. 21).<sup>70</sup> Here the lynchets are quite marked, and the hut-circles are the finest examples the writer has seen on the moor. These huts, which are geometrically circular, having a diameter of 30 to 40 feet and double walls 5 to 6 feet thick, which still stand their full height of about 4 feet, have not been excavated. When this is done they may prove to be later than most of the others.

Similar rectangular and strongly lynchetted fields associated with well-built hut-circles are to be seen at Foale's Arrishes, near Rippon Tor (fig. 20).<sup>71</sup> The walls of some of these plots have been restored and improved in later times, probably as paddocks for cattle. The hut-circles have been excavated and yielded only a few shards of coarse Bronze Age pottery, a few worked flints, and three rubbing-stones of red grit.<sup>72</sup>

More usual are slightly lynchetted plots, very small and irregular in shape, and evidently earlier in type than those we have been considering. The amount of corn that could have been grown on them must have been very small, but that corn was actually grown there is proved by the finding of parts of saddle-querns in two such settlements, one on White (or Whiten) Ridge, near Postbridge (figs. 19 and 23), and the other on Standon Down, by the river Tavy (fig. 25).<sup>73</sup> The extraordinarily small size of the plots in the latter instance recalls the description given of Highland corn-plots cultivated by the caschrom in 1793:—"The inhabitants make a shift to rear some corn . . . great labour in clearing their little plots (many of which are no larger than the floor of an ordinary room), by digging, turning out great stones, and grubbing up bushes and underwood."<sup>74</sup>

Another type of corn-plot is extremely interesting, because it probably represents the very beginnings of agriculture in this country. A good example exists about half-a-mile south-east of Trowlesworthy Warren House in the parish of Shaugh Prior,<sup>75</sup> where are eight oval

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<sup>70</sup> 6 in. O.S., Devon, lxxxix, NE and SE.

<sup>71</sup> 6 in. O.S., Devon, cviii, NW.

<sup>72</sup> *Trans. Devon Assoc.* xxix, 151-6; *V.C.H. Devon*, i, 354.

<sup>73</sup> *T.D.A.*, xxviii, 183; xxxiv, 160-5; *V.C.H. Devon*, i, 355.

<sup>74</sup> *Statistical Accounts of Scotland*, vi, 287-8; the reference is to the parish of Edderachylis, Sutherlandshire.

<sup>75</sup> 6 in. O.S. Devon, cxii, SE.



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enclosures surrounded by the remains of stone walls, each containing three or four hut-circles, with a few other huts scattered about outside (figs. 18 and 22). These enclosures, of which the greater diameter varies from 100 to 250 feet, are each markedly lynched, but the amount of levelling so produced is negligible, thus putting out of court any suggestion that they had been intentionally levelled.

A similar lynched enclosure exists on the bank of the river Plym, near Legis Tor, half a mile to the north, associated with other more complicated enclosures less definitely lynched. Some of the hut-circles in this neighbourhood were excavated, yielding round-bottomed vessels and horizontal lugs that resemble very closely the neolithic pottery found by Mr Alexander Keiller at Windmill Hill, Avebury.<sup>76</sup> Unfortunately there was nothing in the report to indicate whether all the enclosures here were co-eval, or which of the hut-circles yielded the pottery.

It is greatly to be desired that some of the huts in the Trowlesworthy enclosures should be excavated. These eight enclosures evidently represent as many separate homesteads, each consisting of three or four huts, and in all probability dating from the beginning of the Bronze Age, if not from the end of the neolithic period. Our study of the origin of the plough in the last section would lead us to expect that at such an early period a mattock, hoe, or digging-stick would be the only tool used for breaking up the ground. With such an implement the shape of the plot cultivated would be immaterial since no furrow was made. The scarcity of grain would be likely to preclude extensive cultivation, and where so natural a place for it to be carried on as round and between the huts that go to form the dwelling? Equally naturally will the plot be ringed round with a dry stone wall, partly to protect the crop from the cattle, and partly as a dump for stones collected from the surface. A few large boulders lying about will inconvenience the free progress of the digging-stick no more than will the huts, awkwardly placed, as we should think them, right in the middle of the corn. This type of plot, therefore, corresponds with what we should call a garden rather than a field.

As time goes on and communities increase we see these huts with their corn-plots huddled together in close contiguity, and the latter necessarily take on irregular shapes to fit in with their neighbours.

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<sup>76</sup> *Trans. Devon Assoc.* xxviii, 174-99; *V.C.H. Devon*, i, 353. The writer has failed to trace the present whereabouts of this important pottery from Legis Tor.

## PREHISTORIC AGRICULTURE IN BRITAIN

It is noticeable that anything approaching a straight line in the boundaries of the plots seems to have been, as far as possible, avoided. In those days the curved line of beauty was evidently esteemed more highly than the straight line of duty.

When, however, the irresponsible mattock or digging-stick gives place to the caschrom, or foot-plough, we have at last an instrument that makes a furrow. For satisfactory furrows a straight-sided plot is a desideratum, and in this way the rectangular field is evolved, such as we have seen at the Kes Tor and Foale's Arrishes. With the introduction of the two-ox plough more work can be done in a day, and consequently the furrow is made longer and the field larger. We have already seen how the introduction of the eight-ox plough lengthened the furrows still more, and the same process is at work to-day on the unenclosed areas of the chalk Downs, where motor ploughs have made possible enormous fields with immensely long furrows.<sup>77</sup>

On Bodmin Moor, in the neighbourhood of Brown Willy, Rough Tor and Garrow Tor, two contrasting types of ancient fields may be seen to advantage, the one, small irregular plots connected with hut-circles (fig. 24), and the other, rectangular 'acres,' probably medieval, closely resembling the Breton *arpent*,<sup>78</sup> and still showing longitudinal ridges (*seliones*) averaging  $7\frac{1}{2}$  feet wide (figs. 14-16). Both types show good lynchets.

Seeing that our earliest agriculturists seem to have been hill-folk, the probability is that the earliest "fields" were enclosed from open pasture-land, and not from forest, as has generally been assumed. This view is supported by the fact that the English word 'acre' and the Latin *ager*, with their cognates, are derived from a root meaning wild open country or pasture (Sans. *ajra*).<sup>79</sup>

### METHODS OF CULTIVATION

We have so far discussed the shape, size and general outlay of the ancient fields in relation to methods of ploughing. It remains to be seen whether there is any evidence as to the methods of cultivation adopted.

The inhabitants of the hut-circles were in all probability nomad

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<sup>77</sup> A motor-tractor can plough 5 acres in the day.—*Journ. Bd. Agriculture*, xxiii, 683.

<sup>78</sup> F. Seebohm, *Customary Acres and their Historical Importance*, 130.

<sup>79</sup> Schrader and Jevons, *op. cit.* 283.



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or semi-nomad herdsmen who never inhabited one site for very long. This is borne out by the scarcity of relics found in the huts, and also by the slight degree of lynchetting the fields have undergone. Like the patriarch Isaac, himself a nomad herdsman who "sowed in that land, and found in the same year an hundredfold, and . . . departed thence,"<sup>80</sup> these nomads, who were probably his contemporaries, may have inhabited a village for from one to five years, until the corn plots were exhausted, and then moved elsewhere. Such methods of agriculture demand, and provide, no manurial treatment to maintain the fertility of the soil.

Unfortunately manuring is not a process which leaves any permanent archaeological evidence behind it. When, however, one sees, as one does at Kes Tor and Foale's Arrishes, rectangular fields, sometimes with considerable lynchets, and no visible evidence of any two-field or three-field rotation of crops, one is justified in assuming that some sort of manurial treatment must have been adopted, even if it was only the folding of cattle on the fields in winter.<sup>81</sup>

When we turn to the early Iron Age and the Celtic field-system as we have it revealed on the chalk hills, we find definite evidence of long-continued cultivation in the enormous lynchets which are frequently as much as 8 feet high, and occasionally as high as 18 feet. As yet we have no sufficiently complete plan of the fields of any one settlement to say whether they appear to have allowed for a two- or three-field rotation, as was the rule in the English open-field system. Manuring must have been thoroughly done, for we know from several classical writers that great quantities of corn were grown in Britain at any rate between 325 B.C. and 360 A.D.<sup>82</sup> Pliny also describes the way in which the Britons marled their fields with chalk obtained from very deep pits<sup>83</sup>—a process which tends to overcome the acidity of the surface soil, and which, according to experiments carried out by Sir John Russell, D.Sc., is definitely beneficial to some crops, such as barley.<sup>84</sup> Whether potash was applied in the form of wood-ash we have no knowledge ; but that such a process was an ancient one is suggested

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<sup>80</sup> Gen. xxvi, 12, 17.

<sup>81</sup> The cereals found in the Swiss lake-dwellings were all spring-sown.—Keller, *op. cit.* 519.

<sup>82</sup> See *Sussex Arch. Coll.* lxiv, 60-2.

<sup>83</sup> Pliny, *N.H.* xvii, 4.

<sup>84</sup> *Journ. Board of Agriculture* (1916), xxiii, 625-32.

## PREHISTORIC AGRICULTURE IN BRITAIN

by a passage in the *Mabinogion*,<sup>85</sup> to which Sir John Russell has kindly drawn our attention, where Kilhwch was commanded to cut down trees, burn the branches, and spread the ashes on the fields as manure.

### CONCLUSIONS

We may sum up the evidence regarding prehistoric agriculture in this country as follows :—

1. Traces of agriculture first appear at the end of the neolithic period (about 2000–1800 B.C.).
2. During the early Bronze Age corn-plots were small and irregular, were probably tilled with a digging-stick or mattock without furrows, were reaped with serrated flint flakes set in wooden sickles, and were abandoned as soon as they became exhausted. Corn was ground on saddle-querns.
3. During the latter part of the Bronze Age the fields probably came to be tilled with some sort of foot-plough making a furrow, and therefore assumed a rectangular shape. They were reaped with bronze sickles, at first flat, and later socketed, and corn continued to be ground in saddle-querns. The two-ox plough was possibly introduced latterly.
4. The early Iron Age probably saw the spread of the use of the two-ox plough, bringing with it rather larger rectangular fields. Corn was reaped with iron sickles. This period saw the gradual introduction of rotary querns.
5. The Roman period saw no marked change in agricultural conditions.
6. The Saxon conquest caused a complete break of continuity, introducing eight-ox ploughs and long, narrow strip-fields, with valley-settlements and the neglect or destruction of the preceding system, at any rate in the south-east of Britain.

The study of prehistoric field-systems is yet in its infancy, and we need to know much more before we can give any answers to the problems arising in connexion with the characteristic features of the

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<sup>85</sup> *Mabinogion*, Tale of Kilhwch and Olwen. Cf. also Pliny, *N.H.* xvii, 5.



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Celtic field-systems as they appear in Wales, Scotland, and Ireland in historic times. More surveys, if possible of complete settlements, and more excavation of the associated dwellings are needed before we can form a conception of the growth of ideas relating to communal tillage, rotation of ownership, and private ownership in land.

In conclusion I must express my indebtedness to Mr O. G. S. Crawford for help in many ways in the preparation of this paper, particularly in the compilation of the bibliography and in providing the excellent air-photographs.

### BIBLIOGRAPHY

#### CEREALS

DE CANDOLLE.—*Origin of Cultivated Plants*.

O. STAFF.—*History of the Wheats*, Suppl. to Journ. of Board of Agriculture (June 1910), xvii.

#### SICKLES

F. C. J. SPURRELL.—“Notes on Early Sickles,” *Arch. Journ.* xlix, 53–68.

ROBERT MUNRO.—“Flint Saws *versus* Sickles,” *Ibid.* 164–75.

#### QUERNS

R. BENNETT and J. ELTON.—*History of Corn-milling*, vol. i. (London and Liverpool, 1898).

#### PLOUGHS

E. B. TYLOR, F.R.S.—“Origin of the Plough and Wheel-carriage.” *Journ. Anthropol. Inst.* x, 74–9.

C. H. RAU.—*Geschichte des Pfluges* (1845).

H. BEHLEN.—*Der Pflug und das Pflügen bei den Römern und in Mitteleuropa in vorgeschichtliche Zeit* (Dillenburg, 1904).

### PREHISTORIC CELTIC FIELD-SYSTEMS

REGINALD BLAKER.—*Sussex Arch. Coll.* xlv, 198–203.

H. S. TOMS.—“The Problem of Ancient Cultivations,” *The Antiquary*, Nov. 1911, 411–17.

O. G. S. CRAWFORD.—*Geograph. Journ.* lxi, 342–66.

O. G. S. CRAWFORD.—*Air-Survey and Archaeology* (Ordnance Survey professional papers, N.S. no. 7, 1924).

ELIOT CURWEN and E. CECIL CURWEN.—“Sussex Lynchets and their associated Field-ways,” *Sussex Arch. Coll.* lxiv, 1–65.

# PREHISTORIC AGRICULTURE IN BRITAIN

## ENGLISH AND OTHER FIELD-SYSTEMS

- W. H. R. CURTLER.—*A Short History of English Agriculture* (Oxford, 1909).
- H. L. GRAY.—*English Field Systems*, Harvard Historical Studies, vol. xxii. (Cambridge, Mass., 1915, Milford).
- G. HANSSEN.—*Agrarhistorische Abhandlungen* (Leipzig, 1880-4, 2 v.).
- F. W. MAITLAND.—*Domesday Book and Beyond* (Camb. 1921), "Measures and Fields," 362-99.
- A. MEITZEN.—*Siedelung und Agrarwesen der Westgermanen und Oestgermanen, der Kelten, Römer, Finnen und Slawen* (Berlin, 1895, 3 v. and atlas).
- E. NASSE.—*On the Agricultural Community of the Middle Ages, and Enclosures of the Sixteenth Century in England*, trans. by H. A. Ouvry (London, 1872).
- O. C. PELL.—"A New View of the Geldable Unit of Assessment of Domesday," *Domesday Studies*, part I. (1888), 227-385.
- O. SCHLÜTER.—*Siedlungskunde des Thales der Unstrut von der sachlenbürger Pforte bis zur Mündung* (Halle, 1896).
- F. SEEBOHM.—*The English Village Community* (London, 1883); *Customary Acres and their Historical Importance* (London, 1914).
- G. SLATER.—*The English Peasantry and the Enclosure of the Common Fields* (London, 1907).
- P. VINOGRADOFF.—*Villeinage in England* (Oxford, 1892); *English Society in the Eleventh Century* (Oxford, 1908).



# The Development and Antiquity of the Scottish Brochs

by ALEXANDER O. CURLE

THE Scottish area is particularly rich in prehistoric remains, in some measure due to the fact that being a hilly and mountainous country large tracts of the surface have never been torn by the plough, nor suffered from the iconoclastic hand of the improver. Save for the effects of drainage, and some change in the character of vegetation arising from alteration of climate, much of the moorland country must have changed little in aspect since a remote past.

Among the various prehistoric structures in Scotland none is more remarkable than the broch. It does not occur out of Scotland, and neither its development nor period of occupation are generally understood.

The typical broch is a circular structure, a species of tower, built entirely of dry-stone masonry without the use of any cementing material, formed with a wall measuring at base, in some cases, as much as 15 feet in thickness, in others considerably less, enclosing a central courtyard with a diameter of 30 feet or thereby, and except for perhaps an encircling corridor, probably open to the sky. The wall had a considerable batter at its base on the outer surface, and rose upwards to an estimated height in many cases of 50 or 60 feet. No broch at the present day remains intact to anything approaching its original elevation except perhaps the broch of Mousa, situated on a small island off the coast of Shetland, and it, though a small one, is still 45 feet high. Save the doorway on the ground level no opening pierced the surface of the outer wall, and the broch rose majestically from the ground, a very cylinder of stone, an impregnable fortress. (Plate 1).

The doorway built up on each side to a height of 5 feet or thereby, having the jambs rising upwards with an inward inclination and surmounted by a lintel, the latter, at times a large triangular slab of stone, gave access to the interior court by a passage directly through the wall. Some 6 feet or thereby inwards from the outside, checks formed

PLATE I



BROCH OF MOUSSA  
Ph. G. W. Wilson, Aberdeen

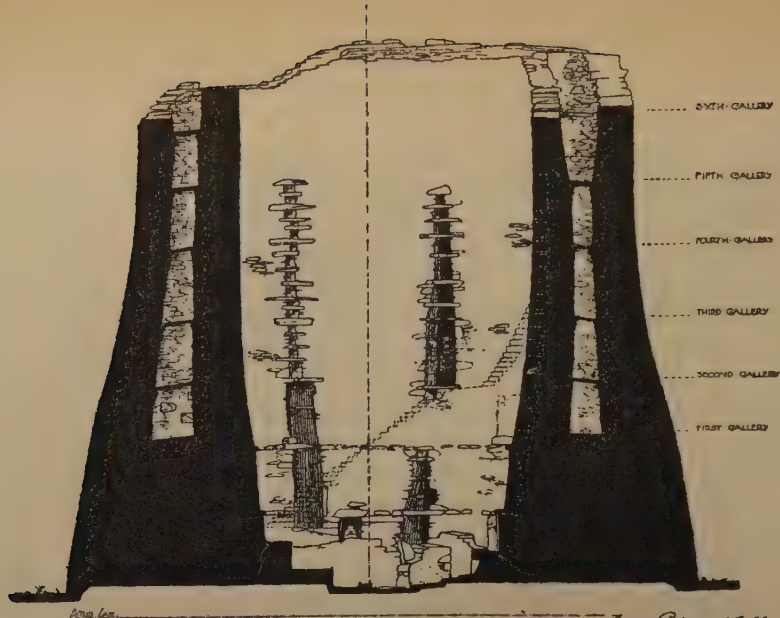




## SCOTTISH BROCHS

on either side of the passage by the insertion edgeways of upright slabs, or by the expansion of the passage itself, indicated the position of the door, while a hole passing deeply into the wall on one side formed the socket for a massive bar which kept the door secure when shut. Nearer the interior there was occasionally a second doorway. These doors, most probably fashioned of stone, revolved on stone pivots, the socket stones of which are occasionally to be seen in the ruins. Very frequently the passage was roofed with slabs laid with intervals between them in such a way that an intruder into the passage might be assailed from above. Behind the outer door-checks, if there were two doors, access was given through a short passage to a chamber fashioned in the thickness of the wall measuring approximately 7 to 8 feet in length by 5 to 6 feet in breadth.

Opening off the courtyard there were usually other chambers while a door situated about a quarter way round the circumference of the wall to the left gave access to a short passage leading to the foot of a stone stair in the centre of the wall which rose to the right. To the left opposite the foot of the stair a long chamber was frequently constructed. The stair as it circled upwards encountered a series of galleries one directly above the other, slabs of stone tied into the outer and inner walls forming respectively the roof of one and the floor of the other (figs. 1 and 2). At intervals vertical rows of window-like openings looking into the interior crossed these galleries. As the exterior face of the wall of the broch rose with an inward slope and as the interior face was vertical, the breadth of these galleries consequently diminished upwards. This is clearly shown in the sectional view of the Broch of Dun Telve in Glen Beag, Inverness-shire (plate II), one of the few examples in which a considerable portion of the superstructure remains. Here, while the two lower galleries are of such width as to have permitted their occupancy by human beings if need be, the upper galleries on the other hand are so narrow, and so rough in structure, as to suggest some other purpose than inhabitation for this typical and peculiar feature of the broch. The most plausible explanation is a structural one. That by substituting a series of superimposed galleries for solid building a great reduction in the amount of labour and material was secured, and also that by utilizing the horizontal flags as working platforms during the course of construction the need for elaborate scaffolding was done away with. Similarly the window-like openings reduced the pressure on the lintels of doorways giving access to

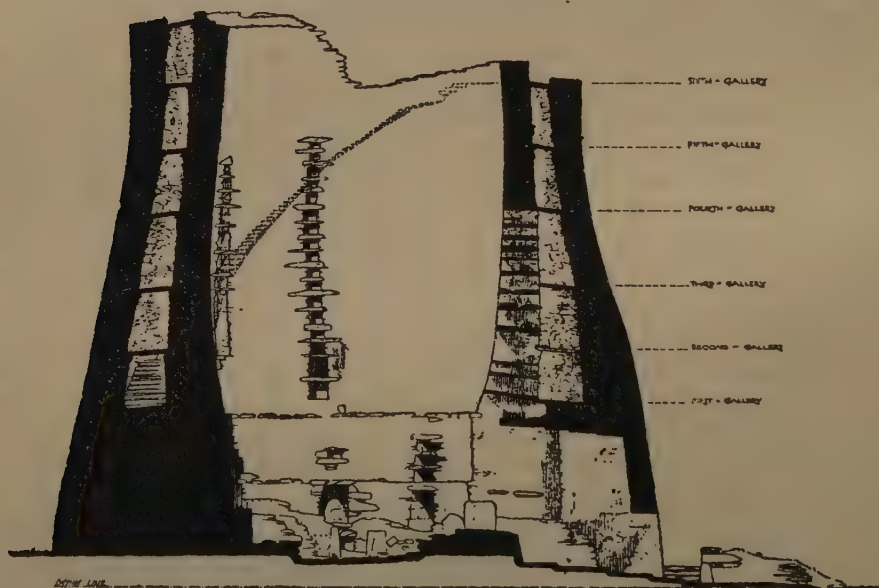


Area Low

SECTION - C-D

*John Roberts A.R.C.S.*  
1899

10 5 0 10 20 30 FEET



Area Low

SECTION - A-B

*John Roberts A.R.C.S.*  
1899

10 5 0 10 20 30 FEET

FIGS. 1 AND 2. SECTIONAL ELEVATIONS OF THE BROCH OF MOUSA

## SCOTTISH BROCHS

the stair or chamber beneath, and afforded a view of the interior valuable for purposes of defence in the event of assailants having gained the courtyard. One other feature of these remarkable structures calls for notice. Almost invariably at a height of some 6 feet above floor level a scarcement, or ledge, has been formed on the inner face of the wall to a breadth of some 12 inches. This ledge has been produced either by a slight restriction of the thickness of the wall or by the insertion of a line of projecting stones of light weight. The purpose of such a ledge has long been a puzzle to archaeologists, but the excavation of the broch of Dun Troddan in Glen Beag, Inverness-shire, indicates clearly in that instance the use which it served, which in all probability was general. In this case the interior face of the scarcement is formed at a height of 6 feet by an intake of the wall above. In the floor of the interior slightly to the north of the actual centre lay a well-formed rectangular hearth, and encircling it with one exception at a distance of from 6 to 7 feet out from the wall, was a series of post holes eleven in number measuring about 1 foot 9 inches in depth and 12 to 14 inches in diameter. The distances between the post holes was not constant as may be seen by reference to the plan (fig.4) where also will be observed towards the entrance a marked irregularity in their positions. From the situations of these post holes at this point it is evident that the arrangement was controlled by some special circumstances. That the holes were intended for posts to support a roof the other end of which rested on the scarcement, seems obvious, thus forming a covered corridor, or gallery, around the court, of which the central area containing the hearth was open to the sky. If we assume that the corridor was closed at either end at the entrance, and also between the posts, and was not a mere colonnade, then it is probable that access to the interior was gained by a gate or door opening between the post holes nos. 11 and 1 of the plan. It is in this respect also worthy of note that the hearth is placed eccentrically and so as to be parallel to such a supposed line of entrance, and in such a position as to leave a wider space between it and the post holes on that side than on the north. As suggested above, the ends of the corridor were probably closed on either side of the entrance, in which case the access into the corridor itself was possibly by a door between the posts nos. 2 and 3 of the plan. To those familiar with the plans of the wags or galleried dwellings of Caithness, and the somewhat analogous structures of North Uist, in which such a closed-in corridor was formed around a central space, the interior arrangement suggested for this broch will be easily understood. The addition of



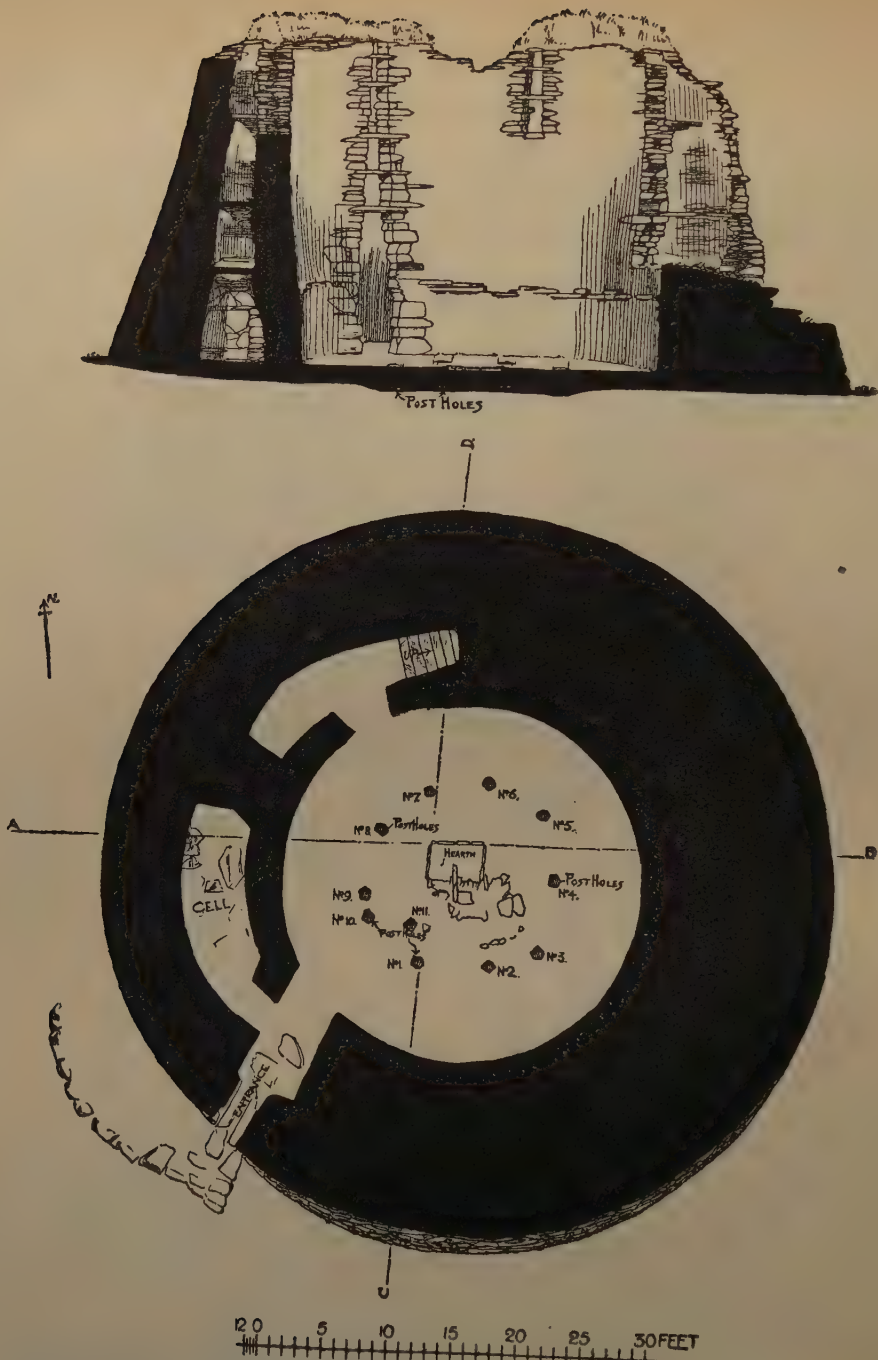


FIG. 3. SECTIONAL ELEVATION OF THE BROCH OF DUN TRODDAN SHOWING THE GALLERIES AND VERTICAL OPENINGS

FIG. 4. GROUND PLAN SHOWING THE POSITIONS OF THE POST-HOLES

## SCOTTISH BROCHS

such a corridor also explains the presence of ambries occurring in the interior wall faces of certain brochs.

From time to time an analogy has been drawn between the brochs of Scotland and certain archaic structures in Sardinia known as Nuraghi for which, however, there is no justification other than that both classes of buildings are circular on plan and fashioned in dry stone masonry. There the analogy appears to end, for while the broch was a dwelling with an interior courtyard, the Nuraghi was a sepulchral structure built solid with superimposed chambers in the interior. An analogy might as well be drawn between the brochs and the round towers of Ireland with as little justification.

To seek the origin of brochs it does not seem necessary to go to Sardinia, nor to search for a link in their development throughout the intervening countries. The broch it may be maintained was of local development, but before considering that point it may be well to look at its distribution. The survey of the Ancient and Historical Monuments Commission (Scotland) is adding largely to the record of prehistoric structures throughout the country, and in the counties in the North and West the list of brochs has been considerably extended. Thus in Sutherland it is reckoned that there are remains and sites of eighty, while in the neighbouring county of Caithness the total is one hundred and forty-five. Remains of considerable numbers are to be found also in Orkney and Shetland, and in the counties of Ross and Cromartie, and Inverness. In the last mentioned two counties however the occurrences are chiefly in the islands. In contrast, Perthshire furnishes two examples, Forfarshire two, while Midlothian, Selkirk, and Berwick one each. In the county of Wigtown on the other hand there are probably the ruins of three, but excavation is necessary to establish the type. It is thus evident that the North and West of Scotland were the regions where the broch flourished, its occurrence in the central and southern districts being probably the result of some southward penetration of the northern tribes and that of a temporary nature. Of southern brochs that of Edinshall in Berwickshire, though reduced almost to ground level, has been one of the largest of its class, with a diameter over all at ground level of some 94 feet, and in its main features shows the type fully developed. Before this southward penetration occurred the broch had attained its full development somewhere in the north or west, with central courtyard, stair, superimposed galleries and chambers in the thickness of the wall.

Now all these characteristics are to be found in other structures of a

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defensive nature in the West of Scotland, and the additional features which really distinguished the broch proper are the invariable circular plan and the lofty elevation. In the West of Scotland, especially in the Isles, certain small forts are to be met with which have been appropriately termed 'galleried duns.' For the most part they occupy rocky promontories taking their form from the contour of the summit, and they are not therefore necessarily circular on plan. They are distinguished from the ordinary stone fort by the long narrow galleries within the thickness of the wall, and they have also low narrow doorways, supplied with door checks and barholes, as have also the brochs. In several instances the defensive character of the site occupied being of such a nature as to render unnecessary the complete encirclement of the position, a massive wall has been erected only on a limited front. The ruined condition of these duns prevents any actual estimate being made of their original height, but in respect that some of them, such as Dun Trugaig in Inverness-shire, contain superimposed galleries, the elevation of the galleried portion may have been considerable.

Another type of structure, examples of which occur only in the west, discloses features which it also has in common with the broch. This is a small type of fort to which the name of semi-broch was given by the late Mr Erskine Beveridge, who was the first to direct attention to it. The analogous features which these semi-brochs present are, a circular plan, with courtyard approximating in diameter to that of a broch, and a gallery in the thickness of the wall. But as the gallery seems to have been confined to the ground level the wall probably did not attain to any considerable height.

The small stone-built fort or dun, with a gallery in the thickness of the wall, finds its analogy among the stone cahairs of Ireland, where similarly constructed galleries are of frequent occurrence.

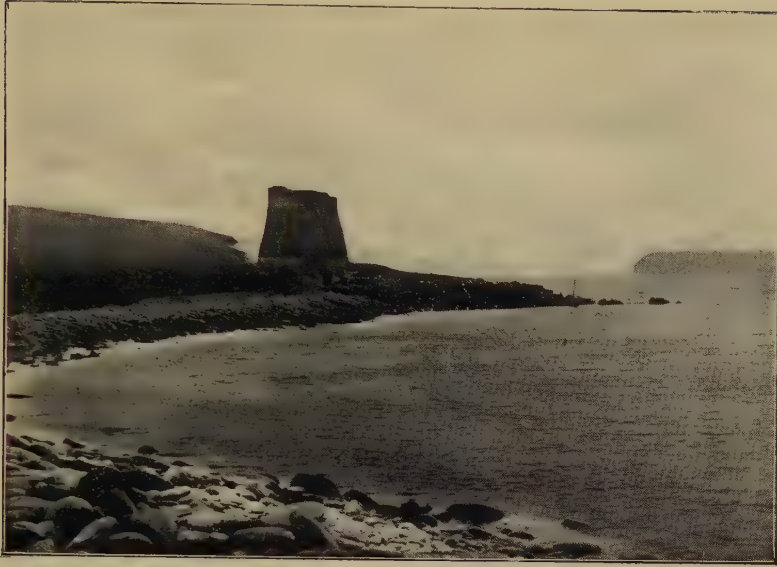
The common features of these defensive works indicate the lines of development, and the probable origin of the broch; though one may not be justified in claiming without further evidence—which excavation alone can furnish—that either the galleried dun, or the semi-broch, as their remains exist, are precursors of the broch rather than contemporary structures of a modified nature combining features derived from a common origin.\*

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\* The question of the development of the broch has been considered in fuller detail in the Report and Inventory of the Royal Commission on Ancient Monuments, Scotland, dealing with the Outer Hebrides, Skye and the small isles, shortly to be issued.



PLATE II



1. DISTANT VIEW OF THE BROCH OF MOUSA



2. VIEW OF THE INTERIOR OF THE BROCH OF DUN TELVE,  
SHOWING THE VERTICAL OPENINGS IN THE FACE OF THE WALL

*facing p. 296*



## SCOTTISH BROCHS

A number of brochs have been cleared out ; a few have been scientifically excavated, and there are still numerous examples awaiting the attention of the skilled excavator.

As to the period of the construction and occupation of the brochs, the relics that have been recovered from them point to one definite conclusion. The occupants belonged to the Iron Age period of culture, for no broch has yet yielded relics characteristic of the Age of Bronze. On the strength of certain stained pebbles resembling those from Mas-d'Azil in the Pyrenees, and dating from Azilian times, having been found in two of the Caithness brochs a more remote origin has been claimed for them. But the brochs in which these objects were found were not more primitive in plan than others, in fact, one of them with two doorways and two staircases seemed to have been more developed than the type. The associated relics, including a piece of Roman Samian ware, querns, both of the saddle and rotary types, with a portion of an armlet of shale, etc., afforded no evidence of a pre-Roman date.

Such positive evidence of the date of occupation as has hitherto been produced, conclusively establishes the main period of occupancy as during the Roman invasion of Scotland. The most significant relics are the fragments of Roman pottery, and especially of Samian bowls, found in brochs as far apart as Okstrow in the Orkney Islands, and Torwoodlee in Selkirkshire. From the former came several pieces of a coarse undecorated bowl, probably of German manufacture, while from the latter there were recovered fragments of undecorated Samian ware as well as other Roman relics, including a coin of Vespasian, and fragments of glass bottles, cooking pots, mortaria, and amphorae. From four of the brochs in Caithness came pieces of decorated Samian ware, the Keiss broch yielding up two portions of a bowl on one of which is portrayed an undraped figure of Venus. The general character of this ware indicated a second century date for its manufacture, and we may safely assume that objects so fragile as pottery bowls found their way to the brochs in no later century than that in which they were fashioned and brought to Scotland. How long previous to the second century the brochs were in occupation it is still impossible to say, but probably for several hundred years. The excavation of the few brochs in the south of Scotland has not revealed a long period of occupation for them. The broch of Torwoodlee in Selkirkshire produced chiefly Roman relics of the 2nd century ; the Berwickshire broch of Edinshall yielded a few native relics which might well be of the same period, and the broch of



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Bow in Midlothian was notable for the sherds of coarse Roman pottery which it contained.

In the north on the other hand there is ample evidence of the use of the brochs over a long period of time, both from the numerous examples and the quantities of relics in the shape of querns and fragments of pottery found within them. The 2nd century occupation of these southern brochs is clearly established by the relics, and by that time the broch builders, as these examples show, were quite familiar with the broch in its fully developed form. It is a fair presumption therefore that before the southward penetration of this structural idea or, possibly of a section of the people who habitually made use of it, the broch had passed through years, perhaps centuries, of development and had gradually spread over the northern and western regions of Scotland.

The broch in the south seems to have been an exotic ; it came late and passed away soon. In the west and north it was a native development in full use during the second century and, possibly, for centuries after, but we have still to recover from a broch wheel-made native pottery which may indicate an occupancy during the eight or ninth century, or of Viking relics referable to the same period. Two Viking brooches it is true were found on the top of the broch of Castlehaven near Thurso, but the fact of their discovery in such a site merely showed that long before the date of their deposit this broch had fallen into ruins, and over it had accumulated such a mass of soil as to render it a suitable place to receive a Viking grave in the 10th or 11th century.

I am indebted to the Society of Antiquaries of Scotland for the use of the various blocks illustrating this paper.

# Prehistoric Galilee

by F. TURVILLE PETRE

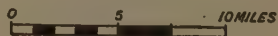
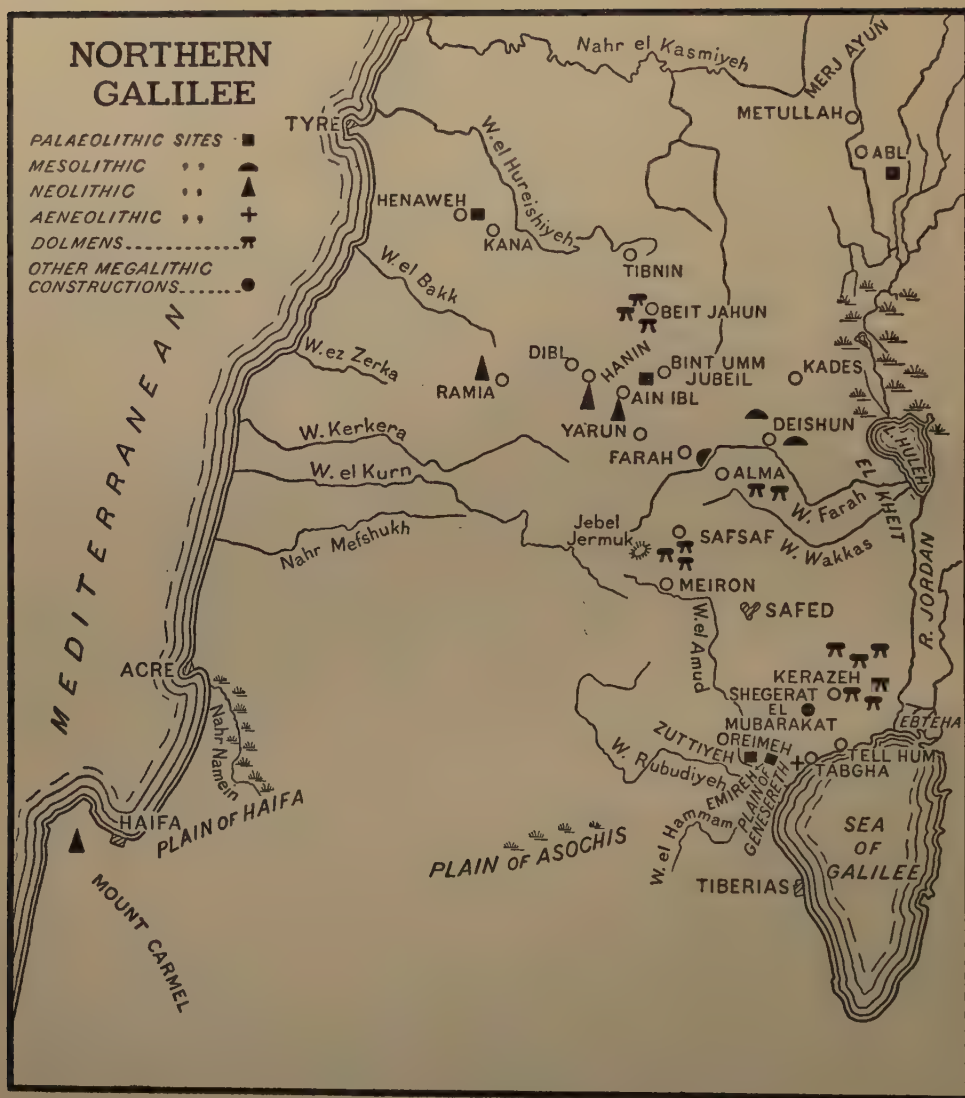
THE district with which we are concerned constitutes the northern section of Galilee between the Nahr-el-Kasmiyeh and the Merj Ayun to the north, and the plains of Haifa and Asochis (Sahel-el-Buttauf) and the Wadi Hammam to the south; to the east and west its boundaries are respectively the Jordan and the Mediterranean. The greater part of the region is occupied by a central limestone massif, the Galilean highlands, which rise in a series of terraces from the Jordan valley to a height of nearly 4000 feet above sea level,<sup>1</sup> and then descend steeply to the Mediterranean coastal plain. Much of this country, especially on the western side of the watershed, is barren and uncultivable, but the high central plateau in the north from Yarun to Tibnin and the lower plateaux of Kades and Safsaf include some of the most productive corn-growing districts west of the Jordan. The beds of the larger valleys also, which even in summer are not entirely waterless, provide fertile garden land and are mostly highly cultivated. The more rocky parts of the region provide scant pasturage for flocks of goats, and in most places the olive is cultivated to a limited extent.

In sharp contrast to the mountains is the broad, undulating valley of the Jordan south of Abl and its continuation, the alluvial plain known as el-Kheit on the western shore of Lake Huleh; two streams, the Wadi Farah and the Wadi Wakkas, serve, in addition to several springs, to irrigate this plain. Smaller but no less fertile is the plain of Genesereth at the north-western corner of the Sea of Galilee, watered by the streams of the Wadi el'Amud, the Wadi Rubudiyeh and the Wadi el Hammam. The climate of these plains, lying at or below sea level, and sheltered from winds on all sides, is practically sub-tropical, and in addition to corn, lemons, oranges and bananas are successfully cultivated; in the swampy land to the north of Lake Huleh even rice can be grown.

On the other side of the mountains, the coastal plain, less fertile

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<sup>1</sup> The highest peak, Jebel Jermuk, is 3934 feet above sea-level.





## PREHISTORIC GALILEE

than the Jordan valley, provides excellent corn land, though cultivation is in places rendered difficult by the encroachment of blown sand.

Under present climatic conditions, the region, though admirably suited to the requirements of an agricultural population, presents little except the commodious caves in its limestone hills to attract nomadic tribes still in a hunting stage of culture; the present lack of wild game is, however, mainly due to ages of over-population, and it is probable that in early times the country was much more thickly wooded and animal life consequently more abundant than at present. In any case the inaccessibility of many of the more fertile areas must in all early culture stages have proved a strong inducement to settlement.

Regarded from the point of view of its geographical relation to surrounding regions, Galilee, as indeed the whole of Palestine, is essentially a highway connecting the plateaux of Asia Minor, important as the probable distribution centre of Alpine man, with the ancient culture centre in the Nile valley; moreover Galilee lies directly on the natural line of communication between the Euphrates and the Mediterranean coast by way of Palmyra, Damascus and the Jordan crossings immediately south of Lake Huleh and at its northern confluence with the Sea of Galilee. It has thus at all times been peculiarly exposed to culture influences from the north and south; while the fertile Jordan valley, with its two fresh water lakes, can hardly have failed to attract nomadic tribes from the waterless and inhospitable plateau of the Hauran, so that on geographical grounds alone traces of extremely early human occupation might well be expected.

Until quite recently, however, the country has been practically neglected by students of Stone Age culture. In 1884 indeed Lortet reported the discovery of a palaeolithic station south-east of Tyre,<sup>2</sup> and in 1908 Bovier Lapi  re in a short note in *La G  ographie* recorded the discovery of several palaeolithic and neolithic factory sites in the highlands.<sup>3</sup> The researches of Zummoffen on the Phoenician coast did not extend south of Tyre and consequently fall outside the district with which we are concerned.

The first archaeologist to undertake a systematic search for traces of Stone Age occupation was Dr. Paul Karge of M  nster University, who spent a considerable part of the years 1909-1911 in Galilee and discovered an important late palaeolithic cave site near Dibl. In 1917

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<sup>2</sup> Lortet, *La Syrie d'aujourd'hui*. Paris, 1884.

<sup>3</sup> *La G  ographie*. *Bulletin de la Soci  t   de G  ographie*, xvii. Paris, 1908.

## ANTIQUITY

he published an exhaustive survey of the prehistoric sites then known in Palestine and Syria<sup>4</sup>. Finally in 1923 and again in 1925-26 the writer of this paper spent several months in searching for traces of early occupation in the vicinity of the plain of Genesereth and in the district north and south of the Wadi Farah, and excavated two palaeolithic cave sites.

Both Karge and the present writer confined their researches mainly to the eastern and central areas of the district and from the point of view of prehistory the western side of the mountains is still practically an unexplored field.

In the following pages a brief survey is given of the Stone Age factory and habitation sites so far known.

### PALAEOLITHIC PERIOD

Unlike Judea, where sites with coups-de-poing of Chellean type are numerous, Galilee seems to have been but thinly populated during the earlier phases of the palaeolithic epoch. Bovier Lapi  re found a number of Chellean coups-de-poing in a valley of the Khallet-el-Hamra between 'Ain Ibl and Bint-umm-Jubeil and water-rolled specimens have occasionally been reported from the western shores of the Sea of Galilee.

An important, and so far unpublished, station was found in 1925 by members of the frontier police force at Metulla. This site lies some three kilometres south-east of the village of Abl in the plain between the mountains and the Jordan; here over an area about two kilometres square flint implements have been collected on the surface in large numbers. Coups-de-poing predominate; they are of distinctively Acheulean type, mostly finely worked over the whole of both faces, with careful retouch on the cutting edges; commonest are the flat, almond-shaped and oval forms, and a circular discoidal type with one side retouched to a sharp cutting edge, the other blunted to afford a convenient grip. A lanceolate form of coup-de-poing with narrow, drawn-out point and bulging butt also occurs and small discoidal core scrapers are numerous.

The implements do not seem to have been manufactured on the site as neither hammer-stones nor flint nodules are to be found and waste flakes are not numerous; flint is not obtainable in the immediate vicinity. This is the only site yielding a uniformly Acheulean culture

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<sup>4</sup> Repha  m, *Die vorgeschichtliche Kultur Palastinas und Phoniziens*. Paderborn, 1917.

## PREHISTORIC GALILEE

so far known in Syria or Palestine, though Acheulean types have frequently been found associated with a predominantly Chellean culture.

An open air station with implements of middle Palaeolithic or Mousterian facies was discovered by Lortet<sup>5</sup> in a valley between the villages of Hennaweh and Kana a few kilometres south-east of Tyre. The palaeolithic deposits are exposed on the surface and form a breccia containing fragments of bone and flint implements, principally Mousterian points and side scrapers; nearby Bovier Lapière<sup>6</sup> discovered a shallow cave with breccia yielding similar implements.

Equally of middle palaeolithic type is the culture of the cave known as the Mugharet-ez-Zuttiyeh excavated by the present writer for the British School of Archaeology in 1925-6. The Mugharet-ez-Zuttiyeh is a large cave some 19 metres deep by 18 metres broad situated in the northern cliffs of the Wadi 'Amud about 40 metres above the modern stream level, and 150 metres upstream of the point where the river enters the plain of Genesereth. Here, below 1 metre of recent stratified deposits containing potsherds of most periods from the early Bronze Age to the present day, was a continuous layer of limestone blocks fallen from the roof, and below these again a layer of palaeolithic habitation débris about 1 metre thick. This layer consisted of fine reddish soil entirely different from the recent deposits above. It was in most places quite soft and easily workable, and only formed a breccia on the terrace immediately in front of the entrance, and in small patches towards the centre of the cave. In this layer a large number of flint implements were found together with fragments of animal bone and part of a human frontal bone of characteristically Neanderthal type, the first conclusive evidence of the existence of Neanderthal man outside Europe.

The fauna, which includes several species of deer, bear and hippopotamus, indicates a well-wooded country plentifully provided with water, with a climate probably rather warmer than at present.

The implements, to judge from the abundance of hammer-stones, nuclei and waste flakes, were all manufactured in the cave. They are of typically Mousterian form, triangular points, side scrapers, discs and coups-de-poing in a variety of shapes and sizes predominating. The highly developed technique and the presence of long symmetrical blade

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<sup>5</sup> Lortet, *l.c.*, p. 139.

<sup>6</sup> Bovier Lapière, *l.c.*, p. 78.



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flakes often finely retouched indicate a late phase of the Mousterian industry, while from the large number and excellent workmanship of the coups-de-poing it would seem that this type of implement here retained its popularity much longer than it did in Western Europe.<sup>7</sup>

Not far from the site just described, in a cliff on the edge of the plain of Genesereth, 100 metres north-east of the entrance to the Wadi Amud, are two small rock shelters and a narrow passage-like cave known as the Mugharet-el-Emireh, also excavated in 1925. (Plate 1).

The deposits in the main shelter had been badly disturbed, but on the terrace in front and in the shallow second shelter, at a depth of 50 centimetres below recent remains was an undisturbed palaeolithic layer. This yielded together with animal remains hundreds of flint implements of late palaeolithic type including such characteristically Aurignacian forms as double end scrapers and carinate and nosed scrapers; together with these were a series of microlithic points, blades and end scrapers often finely retouched, differing in little but size from the larger implements. These implements, which have nothing in common with the geometrical forms of the Tardenoisian industry, do not seem to occur in European stations. A number of triangular points and side scrapers of typical Mousterian form were also found in the layer, another example of the survival of early types of implements analogous to the association of coups-de-poing with a fully developed Mousterian culture at Zuttiyeh.<sup>8</sup>

Apparently of rather later type are the implements collected by Karge in the Mugharet-el-'Abed,<sup>9</sup> a small cave shelter in the Wadi Ayun north-west of Dibl on the high plateau in the north of Galilee. Karge did not undertake any excavations, but was able to collect several hundred implements from the surface. These consisted principally of blade flakes without retouch, or with a blunted back (*à dos rebattu*), fine saws, long flakes with scraper retouch at the end and microlithic blades and points often finely retouched; these latter closely resemble the microliths from Emireh, but the greater variety of forms and finer technique indicates a more developed stage of the industry.

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<sup>7</sup> A preliminary notice on the Mugharet-el-Zuttiyeh appeared in the Bulletin of the British School of Archaeology, Jerusalem, no. VII, 1925. A complete report including a study of the human remains by Sir Arthur Keith and a report on the fauna by Miss D. M. Bate has just appeared.

<sup>8</sup> An account of excavations at Mugharet-el-Emireh is included in the same volume as the Zuttiyeh report.

<sup>9</sup> Karge, *l.c.*, p. 95 ff.

PLATE I



MUGHARET-EL-EMIREH





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This completes the list of the palaeolithic stations so far known in northern Galilee, and unfortunately neither these stations, nor those in Syria and southern Palestine, have supplied any conclusive evidence by which the palaeolithic cultures of western Asia can be chronologically correlated with the equivalent stages in Europe. From the point of view of technology, the three main stages—early, middle and late—established for the development of palaeolithic industry in Europe are all clearly represented in Palestine, and the middle or Mousterian stage is here as in Europe associated with a highly specialized racial type, Neanderthal man, so that it would seem clear that up to this stage at least western Asia formed part of a general Mediterranean culture area. On the other hand, conclusive geological evidence, on the basis of which alone it would be possible to decide whether or not the spread of the Neanderthal race over western Asia was contemporaneous with its spread over Europe, is practically non-existent from Palestine, and evidence of this nature derived from the terraces of the Nile valley is still very scanty and uncertain. Blanckenhorn,<sup>10</sup> working on the hypothesis that the succession of pluvial and interpluvial stages established for the eastern Mediterranean area are equivalent to the glacial and interglacial stages of Europe, can find no conclusive evidence for the presence of man in the Nile valley before the last pluvial stage represented by the middle terrace, and since the last pluvial stage is supposed to correspond to the last or Würm glaciation in Europe, it follows that at the time of man's first arrival in the eastern Mediterranean, Mousterian culture was already fully developed in western Europe, and man had already been established there through a whole glacial and interglacial epoch. Sufficient evidence, however, had not yet been accumulated to make it possible to come to a definite conclusion on this subject.

The transition from middle to late palaeolithic flint working seems to have been accomplished more gradually here than in Europe, as is shown by the association of typical Mousterian implements with a predominantly Aurignacian culture at Emireh. Since implements of Aurignacian type are apparently not found in Egypt the development of a late palaeolithic culture in Syria and Palestine must probably be accounted for by a gradual infiltration of culture influences from the north; whether these influences included the arrival of a new racial

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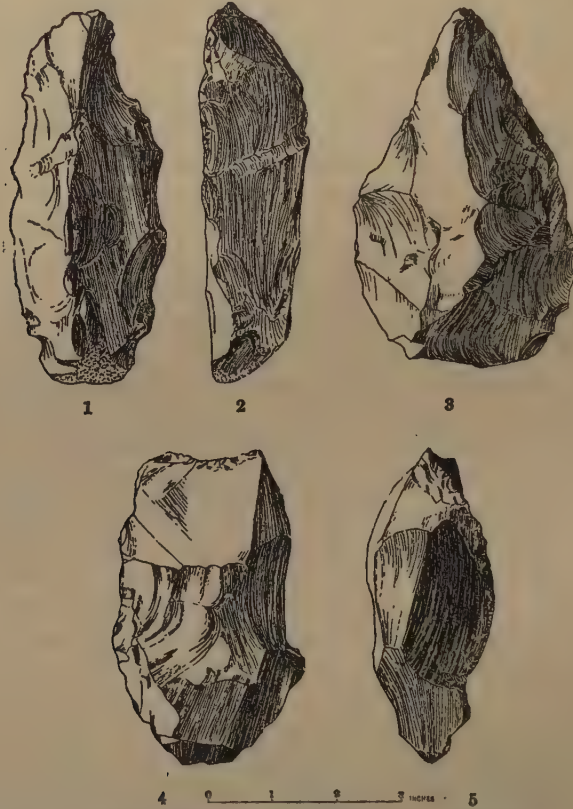
<sup>10</sup> Blanckenhorn, *Die Steinzeit Palastina-Syriens und Nordafrikas in Das Land der Bibel*, bd. III, heft 5.

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type will only be revealed when human remains are found in a late palaeolithic habitation deposit in this region.<sup>11</sup>

### MESOLITHIC SITES

Probably of Mesolithic date are two cultures discovered in 1926



No. 3 FROM SITE SE OF ABL, EARLY PALAEO-LITHIC.  
THE OTHERS FROM WADI FARAH, MESOLITHIC.

north of the Wadi Farah. The first of these is represented at a single site a short distance east of the village of Deishun. On a low rocky

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<sup>11</sup> The fragments of human bone found by Zummoffen in a late palaeolithic cave site Antelyas north of Beyrouth are too incomplete to afford any evidence. Cf. *Anthropos*, III, p. 213 ff.

## PREHISTORIC GALILEE

hill overlooking the Wadi a number of small flint implements were collected. They seem to be derived directly from late palaeolithic forms ; the predominant types are small conical core scrapers, small disc scrapers worked round all or part of the edge, nosed scrapers and side scrapers worked along one steeply sloping side only. There were also a number of short natural flakes showing marks of use as blades.

The second culture was found at a factory site on the northern bank of the Wadi Farah immediately south of the village of the same name, and again on a small plateau known locally as Shemouniyeh about an hour's walk north-west of Deishun. Most of the implements are thick and massive, and in general technique show resemblances to the Campignian implements of Europe. A characteristic implement is a large rectangular cutter ; one of the longer sides is trimmed to form a strong cutting edge, the other is squared off and blunted to give a firm grasp for the hand. Another common implement is a long, narrow, rectangular block of flint retouched to form a scraping edge along one side and sometimes also at the ends. Borers were produced by careful retouching at the end of a naturally pointed thick flake, or by trimming the angle of intersection of two adjacent edges. Rough flakes of chance shape were used as blades or roughly retouched as side scrapers.

### NEOLITHIC SITES

Stations with typical neolithic polished axes, though fairly numerous in Syria, seem to be rare in this region. Bovier Lapière<sup>12</sup> found a rich factory site round a spring below the village of Hanin, where he collected some sixty axes of very elongated form in all stages of manufacture, some only roughed out, others wholly or partly polished ; together with these were nuclei and hammer-stones and long blades sometimes finely retouched. He found similar stations round a pond below the village of Ramia and in the Wadi Yarun between the villages of Yarun and 'Ain Ibl. It would seem that the true neolithic period was of short duration in Galilee, arriving late from the Syrian coastal region and being brought to a premature close by the arrival of the first or Canaanitish Semitic influx and the foundation of the earliest agricultural settlements towards the close of the fourth millennium B.C.

An example of such a settlement is the hill el Oreimeh on the shore of the Sea of Galilee at the north-east corner of the plain of Genesereth.

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<sup>12</sup> Bovier Lapière, *l.c.*, p. 78.



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The small city mound at the summit has not been excavated, but Karge collected a large number of worked flints on the slopes of the hill ; these are mostly fragments of rather formless points, scrapers and blades. The predominant type is the sickle stone often with a rough saw edge which is known from Egyptian examples to have been fixed in a curved wooden handle to form a reaping sickle and thus affords the earliest evidence for the establishment of an agricultural mode of life in Galilee. The whole of this early Canaanitish culture is aeneolithic rather than truly neolithic in character, and develops rapidly into the full Bronze Age.

### MEGALITHIC SITES

An account of the prehistoric sites of Galilee would be incomplete without some reference to the numerous megalithic remains of the district. Since practically no excavations have been carried out at these sites, it is impossible with certainty to assign any date for the arrival of this culture in Palestine ; in view, however, of the fact that dolmens and other megalithic constructions are most numerous east of Jordan, rather rarer in eastern and central Palestine, and practically unknown on the Mediterranean coast and in northern Syria, it would seem that they are the work of nomadic or semi-nomadic tribes from Arabia, and they may perhaps be tentatively ascribed to the period of the first Semitic migration during the late Neolithic and early Bronze Ages about the beginning of the third millennium B.C.

Three important groups of dolmens are so far known in northern Galilee. The northernmost of these groups is near the village of Beit Jahun on the northern plateau. North of the village on the slopes of the Wadi-es-Suwan Mader<sup>13</sup> found twenty-one dolmens, seven of which were in a state of good preservation ; south of the village he found three more. They do not form a definite necropolis, but are scattered at random about the hills. The dolmens stand on the natural surface of the ground, with no foundation terrace, or are sunk slightly into the earth ; <sup>14</sup> in both cases they are low, seldom rising more than a metre above the ground. The dolmen chamber is long and narrow, broader at the inner end than at the entrance, and frequently narrowing from the base upwards. It is built of thin, roughly hewn limestone slabs ; sometimes two or even three slabs are used in each long side.

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<sup>13</sup> Mader, *Zeitschrift des Deutschen Palästina-Vereins*, no. 37 (1914).

<sup>14</sup> An isolated dolmen of this sunken type was found by the writer above the Wadi Farah near the village of Farah (plate II).

PLATE II



DOLMEN NEAR FARAH





## PREHISTORIC GALILEE

The broader end is closed with a slab, the entrance with piled up stones and the whole is covered with a large trimmed capstone. The majority of the dolmens are orientated SW-NE with the entrance at the north-eastern end, so that the body would lie with the head at the south-west end looking north-east, but the opposite arrangement, as well as N-S and W-E orientation is also found. Many of the dolmens are surrounded by stone circles. The use of thin, regularly trimmed slabs and the invariable wedge-shaped ground plan of the chamber must indicate a comparatively developed stage of dolmen construction.

Another group consisting of thirteen dolmens in all is to be found on the plateau between Safsaf and Meiron at the western foot of Jebel Jermuk.<sup>15</sup> The majority of the dolmens resemble those from Beit Jahun in having a wedge-shaped ground plan and in being low and sometimes sunk into the ground. One dolmen stands on the top of an artificial heap of stones, and similar heaps on which dolmens probably formerly stood are to be seen in the vicinity. The orientation of the dolmens at this site is various, N-S, W-E and most frequently NW-SE with the entrance at the south-eastern end.

The third group was discovered by Karge<sup>16</sup> in the desolate stretch of country strewn with basalt blocks which forms the eastern slopes of the Galilean highlands overlooking the northern end of the Sea of Galilee and the plain of the Ebteha. The dolmens are most numerous in the southern part of the necropolis immediately to the east of Kerazeh, the biblical Korazain, between this site and the Jordan valley, but they extend northwards as far as Khirbet Hajar-ed-Damm and Khirbet abu Loze. All over this area of some three kilometres square small groups of dolmens are to be found.

The dolmen itself is built of local basalt blocks, occasionally roughly trimmed, but usually left in their natural state; the predominant orientation is W-E with a slight tendency towards SW-NE; the entrance is usually at the eastern end. Three distinct stages of dolmen construction are represented. The simplest form, which is rare, consists of four orthostatic blocks and a coverstone (figure 1). In the next stage the dolmen chamber is built up of a lower course of orthostatic blocks, upon which a second course of blocks is laid flat, and upon these the coverstone rests (figure 2); the western end is closed by an orthostatic block, the entrance at the eastern end is closed by smaller

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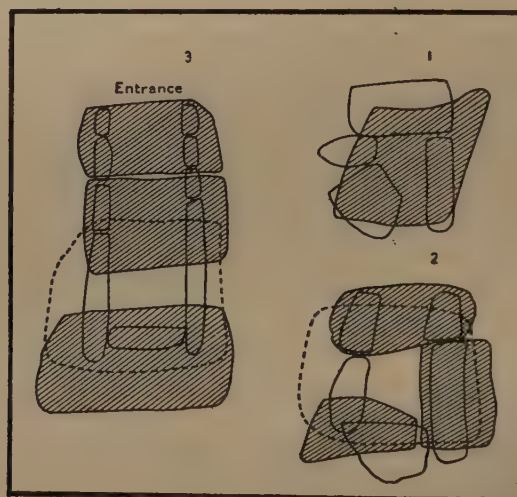
<sup>15</sup> *Memoirs of the Survey of Western Palestine*, 1, 253. Mader, *l.c.*, p. 27.

<sup>16</sup> Karge, *l.c.*, p. 306 ff.

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stones. Small stones are also used to fill in the gaps between the side blocks. Sometimes two courses of blocks lie between the orthostatic slabs below, and the coverstone above, and not infrequently a rough appearance of vaulting is produced by the upper blocks overlapping those below them.

The third type is a simple form of corridor tomb (*allée couverte*) in that the true dolmen chamber is extended eastwards to form a kind of corridor entrance. There is no definite division between the entrance passage and the true dolmen chamber such as is usual in Europe. The main chamber is distinguishable from the passage solely in being covered by the capstone, while the passage is roofed by a single course of blocks resting directly on the orthostatic slabs which form its sides (figure 3).



In addition to this necropolis, the hills between Tell Hum and Safed are strewn with the remains of megalithic constructions ; these include isolated dolmens, stone circles, cyclopean walls and small circular enclosures, the walls of which stand at present about one metre above the ground ; they perhaps formed the foundations of ancient huts. Such remains are particularly numerous on the land called Shegerat-el-Mubarakat south-west of Kerazeh, which is possibly the site of a large megalithic village. Unfortunately none of these sites has yet been excavated or even exhaustively explored.

# Oswald Spengler and the Theory of Historical Cycles

by R. G. COLLINGWOOD

SINCE Plato announced that the course of history returned upon itself in 72,000 years, since Polybius discerned a "circular movement" by which the history of states came back, over and over again, to the same point, the theory of historical cycles has been a commonplace of European thought. Familiar to the thinkers of the Renaissance, it was modified by Vico in the early eighteenth century and again by Hegel in the early nineteenth; and a complete history of the idea would show many curious transformations and cover a long period of time. Here no attempt will be made to summarize this story; the subject of the present paper is the latest and, to ourselves, most striking exposition of the general theory, contained in Dr Oswald Spengler's *Decline of the West*.<sup>1</sup>

Spengler's view of history presents it as a succession of cultures, each having a peculiar physiognomy of its own which it maintains and works out down to the smallest details, and each following a definite course of development through a sequence of phases that is identical for all. Every culture has its spring, its dawning phase, economically based on rural life and spiritually recognizable by a rich mythological imagination expressing in epic and legend the whole world-view which, later, is to be developed in philosophical and scientific form. Then follows its summer, at once a revolt against the mythology and scholasticism of the spring and their continuation; a period in which a young and vigorous urban intelligence pushes religion into the background and brings to the fore a strictly scientific form of consciousness. The autumn of the culture pushes this consciousness to its limit, while at the same time it sees the decay of religion and the impoverishment of inward life; rationalism, enlightenment, are its obvious marks. Last comes winter, the decay of culture and the reign of civilization,

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<sup>1</sup> *Untergang des Abendlandes*, 1918. I quote from the admirable English translation, Allen and Unwin, 1926.



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the materialistic life of the great cities, the cult of science only so far as science is useful, the withering of artistic and intellectual creativeness, the rise of academic and professional philosophy, the death of religion, and the drying-up of all the springs of spiritual life. The four-fold distinction of phases is not a necessity ; at times it is convenient to distinguish more or fewer than four ; but however many are distinguished in one culture the same number is necessarily distinguishable in all others. Thus, the revolt against Gothic which we call the Renaissance is a morphologically necessary phase of our culture ; it is called the exhaustion of the early or primitive phase of a culture and the rise of the conscious or urban phase in which the individual working for himself takes the place of the anonymous corporate effort of the springtime. And therefore the same thing must happen in all cultures ; in Egypt it is the revolt against the " pyramid style," in Greece the close of the archaic period, and so forth. Again, Napoleon in the western culture marks the exact point of transition from autumn to winter, from culture proper to civilization; the break-up of the state proper and the beginning of imperialism, the victory of the great city over the country, the triumph of money over politics. Hence Napoleon is exactly parallel (or, as Spengler calls it, " contemporary ") with Alexander, who marks the transition from the Hellenic world to the Hellenistic ; in no sense parallel with Caesar, who marks a phase *within* the " winter " period, and is " contemporary " with a phase in western history that still lies in the future. The point which we have now reached is the plutocracy disguised by demagogism, and called " democracy," which is represented by the second century B.C. in Rome.

Thus the cycle repeats itself in the smallest details, every phase reappearing in every cycle ; yet what reappears is never the same phase—nothing can happen twice—but only something *homologous* with it, something which in the new cycle corresponds structurally with something in the old. Here comparative anatomy is the clue. A whale and an elephant lead radically different lives ; everything about each is adapted to its own life ; a whale is altogether whale and an elephant is elephantine through and through ; but every organ and every bone in the one is homologous with an organ or a bone in the other. The task of morphology is to grasp at once the homology or correspondence of parts, and their differentiation by the fundamental difference between the two species. Merely to say " this bone in the elephant reminds me of that in the whale," is unscientific ; and it is

## CYCLES IN HISTORY

equally unscientific to say "a whale and an elephant are so different that nothing is gained by comparing them." Similarly it is unscientific merely to mention likenesses in history, a likeness between Alexander and Caesar, or between Buddha and Christ ; and equally unscientific to say that the differences between cultures are so profound as to make likenesses impossible. The only scientific thing to do is to recognize at once the likeness and the difference, combining them into the notion of a homology or structural identity. We then see that Alexander and Caesar cannot be homologous, for they fall in the same culture ; one closes its autumn, the other helps, though not crucially, to consolidate its winter ; and that Buddha and Christ are still less to be compared, because the latter marks the creative spring of the Arabian culture, the former, the congealing winter of the Indian.

This conception is set forth at enormous length in a formless and chaotic volume, heavy with erudition and illuminated by a brilliant play of analogical insight, and a still more brilliant power of discrimination. The unforgettable things in the book are the passages in which the author characterizes such fundamental differences as those between classical things and their modern analogues : in which he illustrates the thesis that "Classical culture possessed no memory, no organ of history in the highest sense," or that the ancients thought of space as the non-existent—this he proves not simply by quoting philosophers but by analysing sculpture and architecture—whereas western man regards infinite space as his true home and proper environment ; which again is proved not from Kant but from a study of Gothic and oil-painting. For the philosopher only makes explicit in his own peculiar way an idea which has necessarily been the common heritage of his entire culture ; and nothing is more admirable than the way in which Spengler sees and expounds this important truth.

The strange thing is that he seems to think his ideas altogether new. Learned as he is, he is either very ignorant or very reticent concerning the history of his own science. He asserts over and over again that the morphology of historical cultures is a wholly new thing. He seems ready to admit, in a single cautious sentence, that with regard to political history the idea is old ; but he denies that anyone has applied it to "*all* branches of a culture." That may be ; all is a large word ; but if he really knew of the cyclical doctrines of Plato, Polybius, Machiavelli, and above all Vico, which last both anticipates his own in all essentials and goes far beyond it in historical profundity ; if he even knew of Professor Petrie's recent and fascinating exposition of the

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same doctrine, he cannot be acquitted of *suppressio veri*. He cannot claim to have omitted them for lack of space ; his book consists largely of repetitions, and of its 250,000 words it would have been easy to devote 250 to naming his predecessors in the field. The fact that he has not done so, makes it incumbent on a critic like the present writer to confess that not only has the main thesis of Spengler's book been familiar to him all his life, but that the reading of it has not given him a single genuinely new idea ; for all the applications of the thesis are mechanical exercises which, so far as the present writer is acquainted with the ground, he has long ago carried out for himself. This one may say without claiming to possess a quarter of Spengler's erudition.

This erudition, gigantic as it is, shows one gap. Spengler is at his worst in discussing philosophy. He shows what must be called a complete misunderstanding of Plato when he mistakes a deliberately " mythical " literary form for a " mystical " type of thought (what philosopher was ever less " mystical " than Plato?); he consistently attributes to the Stoics the fundamental conception of the Epicureans, and incidentally misunderstands its meaning ; and he commits the appalling blunder of asserting that for Descartes the soul is in space—a statement which falsifies the whole modern conception of the relation between space and thought and goes far to explain his long rambling polemics against what he takes to be the philosophy of Kant.

This is not a matter of mere ignorance concerning one department of human history. He is not only ill-informed on the history of philosophy, he is ill at ease in philosophy itself ; and this means that whenever he tries to handle a fundamental problem he does so clumsily and without firmness or penetration. Brilliant on the surface, glittering in its details with a specious cleverness and apparent profundity, his " philosophy of history " is at bottom lacking in orientation, unsound on fundamentals, ill thought-out, and in consequence committed to a method which falsifies even its detail when a crucial case arises. These are serious charges ; they are only made because Spengler's is a serious book which deserves to be taken seriously ; and the first step towards proving them must be to quote falsified details. They are numerous ; here are a few.

" The Greek and Roman alike sacrificed to the gods of the place in which he happened to stay or reside ; all other deities were outside his range of vision " (p. 83). This *must* be true, because it follows from the fundamentally spaceless and timeless character of the classical mind, its insistence on the here-and-now as the only reality. But it



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is *not* true. Even Odysseus prays to his own Athene as he struggles for life in the stormy sea ; and the Roman carries to the ends of the empire the Juppiter Optimus Maximus of the Capitol. The first half of Spengler's sentence is true ; the second is false. This means that he has represented as the whole of the classical mind what was in reality only a part. The tendency to worship the gods of the land was very real ; but it was only one tendency, and it was constantly balanced and checked by a counter-tendency to carry with one the cult of one's own place. *Caelum non animum mutant, qui trans mare currunt.*

Similarly, he asserts more than once that the classical mind was essentially polytheistic, and opposes to it "Magian monotheism" (p. 404), that is, alleges that monotheism is characteristic of the Arabian culture that filled the first millennium of our era. But this is, once more, inaccurate. All the Greek philosophers, until the decadence, were monotheists ; and Spengler knows that philosophy is only a reasoned statement of ideas common to the culture. The monotheism of the philosophers can only indicate a profound strain of monotheism in the whole Graeco-Roman world. And indeed Spengler himself would recognize that strain (for its existence is notorious enough) did not his faulty logic compel him to ignore it in the interests of his morphology.

Again, to take another example from ancient religion, he asserts that classical gods are all gods of the "near" and the "concrete," *numina* resident in things that are here-and-now, this hearth, this door, this field, this river ; this act, whether the act of sowing or the act of love-making ; always the sensuously present and near, never the distant or the future. "It is a deeply significant fact that in Hellas of all countries star-gods, the *numina* of the Far, are wanting" (p. 402). We say nothing of the Sol Invictus, the Mithras, of Imperial Rome ; for with Imperial Rome the author can play heads I win, tails you lose ; in one aspect it is the decadence of the "Classic," in another the rise of the "Magian," and Mithras is obviously Magian. But has he forgotten Zeus-Juppiter the sky-god ? Has he forgotten the stellar deities of Plato and the philosophical sky-worship of Xenophanes ? Has he forgotten that the adjective selected by himself as the most perfectly descriptive of the classical mind is "Apollinian" ?

These are not superficial flaws. They are not minor errors or inconsistencies such as must exist in any great work. They are sacrifices of truth to method ; they are symptoms of a logical fallacy which underlies the whole book and has actually been erected into a principle.

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The fallacy lies in the attempt to characterize a culture by means of a single idea or tendency or feature, to deduce everything from this one central idea without recognizing that a single idea, asserted in this way, calls up its own opposite in order to have something to assert itself against, and henceforth proceeds, not by merely repeating itself, but by playing a game of statement and counter-statement with this opposite. Everything in the classical mind is by Spengler deduced from the here-and-now of the immediate, sense-given, bodily present. But to assert the present is to deny the absent ; therefore the absent must be present to the classical mind as *that which it is denying*, and it is impossible to concentrate one's mind on denying anything unless one vividly feels the need of denying it ; feels that it is *there* to be denied, that someone, or some obscure force within oneself, is asserting it. Further, when one has denied it, and denied it effectively and overwhelmingly, it reasserts itself in a new form ; and one has to begin over again, in order to meet this new peril. So the attempt to frame a whole life—political, artistic, religious, scientific, and so forth—by working out the implications of a single fundamental idea is foredoomed to failure ; the idea can only live in conflict with its own opposite, and unless that opposite is present as an effective force there is no conflict and no life.

This conception of the mind's life as a conflict between opposing ideas or tendencies is, nowadays, one would have thought, a commonplace. Indeed, Spengler himself says it is. It is the more curious that he should not himself possess the conception ; or rather, that he should base his entire system of historical cycles on denying it. For this is what, in effect, he does. It is true that classical art or thought tends to be easily intelligible, while modern or western tends to be obscure to the many and intelligible only to the few ; therefore, says Spengler, this is the whole truth ; " everything that is classical is comprehensible in *one* glance " ; instead of obscure philosophers, for instance, the classical world has philosophers who can be understood by the man in the street : and in this context he actually mentions Heraclitus, without adding that he was nicknamed " the Obscure " (p. 327). Magian monotheism is dualistic, therefore Jewish religion, being Magian, opposes to Jahweh (whom ? you would never guess)—Beelzebub (p. 312) ! The classical culture only cared for the present, therefore the Hellenes, unlike the Vikings, did not bury their dead in great barrows (p. 333) ; and what of the tombs on the Via Appia ? Magian ethics, unlike Western, were mildly " recommended," not

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imposed as a command (p. 344) ; “ the glad tidings of Jesus, like those of Zoroaster, of Mani, of Mahomet, of the Neo-Platonists and of all the cognate Magian religions were mystic benefits *displayed* but in no wise imposed.” And did Islam never appeal for its extension to the help of the sword ? Classical art creates an object to be beheld, a thing standing complete here-and-now, not entering, therefore, into any relation with the beholder or soliciting his attention (p. 329) ; what of the *parabasis* of Aristophanic drama ? These are merely examples of the way in which, to bring them into the scheme, facts are constantly impoverished, robbed of one element merely because it is recessive, in order that the other, dominant as it is, may be erected into a false absolute. No one, probably, will deny that the elements which Spengler identifies as characteristic of this or that culture really are characteristic of it ; where he fails is in thinking out what he means by “ characteristic.” He thinks that the characteristic is a fundamental something whose logical consequences flow smoothly and unopposedly into all its manifestations ; whereas it is really the dominant partner in a pair of opposites, asserting itself only so far as it can keep its opposite in check and therefore always coloured by the hidden presence and underground activity of this opposite. To see the dominant characteristic and miss the recessive is to see history with the eye of the superficial student.

The same fault comes out in a different way in his view of the relation of cultures to one another. Vico, whose work he so curiously ignores, pointed out that the feudal barbarism of the Middle Ages differed from the Homeric feudal barbarism because it contained in itself Christianity, which summarizes and transcends ancient thought (Croce, *Vico*, E.T. p. 132). And even Spengler, when it comes to mathematics, notices that Euclidean geometry is still retained today as elementary or school geometry, so that modern mathematics contains and transcends Greek mathematics. But though he sees this fact, he does not understand it ; for him, every culture is just radically different from every other, based on its own idea and not on the idea of any but itself. Each culture is wholly self-enclosed ; within its limits, it proceeds on a type-pattern exactly like that of the rest, but this similarity of structure is its *only* relation to the rest. For him, therefore, it is a misfortune that our elementary geometry is still Euclidean ; it gets us into bad mathematical habits and sets an unnecessary obstacle in the way of our understanding modern non-Euclidean geometry. Thus the whole idea of “ classical education ”



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is, we infer, a gigantic blunder. Similarly, it was a misfortune, he thinks, that the "Magian" culture grew up under the tutelage of decaying classical civilization, whose petrified relics prevented the new culture from rising spontaneously, because unopposed, in the Roman Imperial age. But surely it is not very hard to see that non-Euclidean geometry is based upon Euclidean even while it transcends and opposes it ; and that the "Magian" culture, far from being stifled by the Roman Empire, used it as a scaffolding for its own building, a trellis for its own climbing flowers. The reason why Spengler denies these obvious facts is because he cannot grasp the true dynamic relation between opposites ; his philosophical error leads him into the purely historical blunder of thinking that one culture, instead of stimulating another by its very opposition, can only crush it or be crushed by it. He thinks of cultures atomistically, each as a self-contained or closed system, precisely as Epicurus thought of the "worlds" whose plurality he asserted ; and just as Epicurus could do nothing better with the spaces between his worlds than to hand them over to the gods as a dwelling, surrendering all attempt to make sense of the relation between world and world, so Spengler plugs the gap between one culture and the next with a crude, cultureless human life which insulates each culture from its neighbours and makes it impossible to envisage an historical whole of which every culture is a part. He actually claims that the abandonment of the historical whole, and the atomistic view of cultures, is a grand merit of his system ; and so it is, for it cuts out the real problem of history, the problem of *interrelating* the various cultures, which is the problem that requires profound and penetrating thought, and leaves only the problem of *comparing* them, a far easier task for those shallow minds that can accept it. And if, as Spengler says, this is the age of shallow and decadent thought, of unphilosophical philosophy and unscientific science, his philosophy of history is, as he says it is, precisely what our age needs.

The fact is that Spengler, with all his erudition and historical learning, lacks the true historical mind. Learning does not make the historian ; there is a *sense* of history which is not acquired through erudition, and for this historical sense we look to Spengler in vain. History deals with the individual in all its individuality ; the historian is concerned to discover the facts, the whole facts and nothing but the facts. Now comparative anatomy is not history but science ; and Spengler's morphology is simply the comparative anatomy of historical periods. The historical morphologist is concerned not to discover

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what happened, but, assuming that he knows what happened, to generalize about its structure as compared with the structure of other happenings. His business is not to *work at* history, but to *talk about* it, on the assumption that someone else has already done the work—the work, that is, of finding out what the facts are, the historian's work. In this sense, Spengler nowhere shows the slightest desire to do a piece of historical work, or the slightest sign of having done one. His history consists of ready-made facts which he has found in books; and what he wants to do is to arrange these in patterns. When the man with historical sense reads a statement in a history book, he at once asks, is that really so? What evidence is there? How can I check the statement? and he sets to work doing over again, for himself, the work of determining the fact. This is because the historical sense means the feeling for historical thought as living thought, a thought that goes on within one's own mind, not a dead thought that can be treated as a finished product, cut adrift from its roots in the mind that thinks it, and played with like a pebble. Now the extraordinary thing about Spengler is that, after giving us a penetrating and vivid description of the difference between history and nature, and setting up the demand that we shall envisage "the world as history"—an admirable demand admirably stated—he goes on to consider the world not as history but precisely as nature, to study it, that is to say, through scientific and not historical spectacles, and to substitute for a truly genetic narrative, which would be history, a self-confessed morphology, which is science. And he is forced into doing this by his own philosophical errors, his errors, that is to say, concerning the structure of his own thought. He prepares us for all this, it is true, by his open scorn of logic and his statement that Goethe and Nietzsche are his only two masters; for neither Goethe nor Nietzsche, with all their poetic gifts and fine intelligence, had any grasp on the distinction between nature and history. And Spengler himself praises Goethe for confusing the two, for treating Nature as history and a culture as an organism.

The touchstone of the historical sense is the future. Science determines the future, foretells an eclipse or the like, just because the object of science is Nature and "Nature has no history." The laws of Nature are timeless truths. For history, time is the great reality; and the future is the infinite well-spring of those events which, when they happen, become present, and whose traces left upon the present enable us to reconstruct them when they are past. We cannot know the future, just because the future has not happened and therefore

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cannot leave its traces in the present. The historian who tries to forecast the future is like a tracker anxiously peering at a muddy road in order to descry the footsteps of the next person who is going to pass that way. All this, the historian knows instinctively. Ask him to forecast a single instant of the future, and he will laugh in your face. If anyone offers to foretell events, he speaks not as an historian but as a scientist or a clairvoyant. And if he offers to foretell events by means of historical thinking, he is either hoaxing his audience or saying historical when he means scientific. Spengler again and again claims that his morphology enables him to foretell the future. He even says that therein lies its chief merit and novelty; in which context, as usual, he refrains from mentioning his predecessors, the crowd of sociological writers, led by Marx, who have made just that claim.

But his claim to foretell the future is absolutely baseless. Just as his morphology does not work at history but only talks about it, does not *determine* the past but, assuming it as already determined, attaches labels to it, so this same method does not determine the future, but only provides a set of labels—the same old set—for a future that is undetermined. For instance, Spengler tells us that between A.D. 2000 and 2200 someone will arise corresponding to Julius Caesar. Well, we ask, what will he do? Where will he live? What will he look like? Whom will he conquer? All Spengler can say is, he will correspond to Julius Caesar; he will do the kind of things that a person would do, who corresponded to Julius Caesar; he will live in a place corresponding to Julius Caesar's Rome; he will look like a person corresponding to Julius Caesar, and so forth. But, we must reply, this is not predetermining history. Suppose, instead, it were a question of the past: suppose we asked, who corresponded to Julius Caesar in the Egyptian culture? Suppose, now, we were told, "oh, the answer is easy: the person who corresponded to Julius Caesar." This would be *the wrong answer*: it would have determined nothing: it would be a mere confession of ignorance concerning the Egyptian past. The *right* answer (Spengler has given it) would be "Thutmosis III." This is a real answer because it names an actual concrete individual in actual concrete circumstances; and until we can do that, we have not determined any history at all. But if the past is not determined until we have said "Thutmosis III," the future is not determined until we can say "John Jones of Bulawayo," or whoever it will be. Spengler's claim to foretell the future is on a par with saying that the possession of a clock will enable its possessor



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to foretell the future because he can say that twelve will happen an hour after eleven. No doubt ; but what will be going on at twelve ?

There is another reason why the claim is wholly futile. On his own showing, the decay of classical culture in Rome synchronized with the rise of Magian culture in the very same culture-area. Thus cultures may overlap both in space and in time. In Hadrian's reign, then, a Spengler might have diagnosed a general petrification and decay of everything classical, and said that the Roman world was a dying world. And when someone pointed to the Pantheon, and said, "is that a symptom of decay ?" the answer would be, "that is an example of imperial display by means of material and mass" (see table II at the end of the book), "and therefore it is meaningless, barren, vulgar civilization-architecture." But a counter-Spengler would retort, "not at all ; the Pantheon is *the first Mosque* (pp. 72, 211, 358—as usual, he says it three times over) "and therefore belongs to the exuberant springtime of a nascent culture." Now it follows from the atomistic view of cultures that a new culture may begin anywhere, at any moment, irrespective of any circumstances whatever ; and there is no possible proof that one is not beginning now. But if so, what becomes of "predetermining the future" ?

It is all the more hopeless because there is no possible way, according to Spengler, of discovering what will be the fundamental idea of any hitherto undeveloped or unexamined culture. This, of course, follows from the atomistic conception ; but its results are very serious. If any two cultures happened to have the same fundamental idea, they would be indistinguishable ; the person corresponding to Julius Caesar would be Julius Caesar himself, repeated identically, name and all, at another date. That this possibility follows logically from Spengler's conception shows how profoundly anti-historical that conception is ; that he has not observed it to follow, shows how ill he has thought out his own position. But on the other hand, if the fundamental idea of one culture differs from that of another, how can the one understand the other ? Spengler unhesitatingly answers, it cannot. We do not understand the classical world ; what we see in it is our own image in an opaque mirror. Very well, but how does he know this to be merely our image ? How does he know that we are not understanding the past as it really was ? There is no answer, and can be no answer ; for the fact is, unless we understand the ancients well enough to know that we do not understand them completely, we can never have reason to suspect that our errors about them are

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erroneous. Spengler, by denying the possibility of understanding other cultures than our own, has denied the possibility of history itself. Here again, bad philosophy—a crude half-baked subjective idealism—brings its own punishment. If history is possible, if we can understand other cultures, we can do so only by re-thinking for ourselves their thoughts, cherishing within us the fundamental idea which framed their lives ; and in that case their culture lives on within ours, as Euclidean geometry lives on within modern geometry and Herodotean history within the mind of the modern historian. But this is to destroy the idea of atomic cultures, and to assert not a mere plurality of cultures but a unity of that plurality, a unity which is the present culture, the heir of all its past. Against that conception Spengler struggles, because, having no historical sense, he does not *feel* it, and, being a bad philosopher, cannot understand it ; yet that conception is presupposed on every page of his work. “ The unities of place, time and action ” I read, opening it at random, “ are . . . an indication of what classical man felt about life ” (p. 323). And how does Spengler know what classical man felt ? Only by putting himself into the position of classical man and feeling it too. Unless he has done that, he is deliberately deceiving us ; no man knows what another feels if he is incapable of feeling it himself.

Spengler's so-called philosophy of history is therefore, we may repeat, lacking in orientation, because it reduces history to a plurality of cultures between whose fundamental ideas there is no relation whatever ; it is unsound on fundamentals, because its purpose—that of “ predetermining the future ”—is impossible in itself and in any case unrealizable by his methods ; it is ill thought-out, because he shows no signs of having seen the fatal objections to it ; and it is committed to the methodical falsification of facts because it distorts every fact falling—or alleged to fall—within a given culture, into an example of an abstract and one-sided idea which is fancied to represent the essence of that culture. In all four respects, it is an unworthy child of the historical studies of the last two hundred years. In each respect it violates elementary dictates of the historical consciousness ; in each respect it is far surpassed by the cyclical doctrines of Hegel, a hundred, and Vico, two hundred years ago. Vico realized that culture (to retain Spengler's term) could not arise by a miracle out of a uniform, purely cultureless, life ; that barbarism contained the seeds of culture in itself, and produced culture by their germination. Thus Vico does away with Spengler's crude and superficial dualism between cultured

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and cultureless life. Further, granted that culture arises out of what Vico calls a "barbarism of sensation" and decays into a "barbarism of reflexion" (the latter being Spengler's civilization), after having achieved a homogeneous development, economic and legal, religious and artistic, scientific and linguistic, Vico sees that this rule is merely approximate and not *a priori* necessary; he sees that there are exceptions to it, or, at least, that it is subject to such diversities of application in practice that it cannot serve as a basis for prophecy. This is, at bottom, because, the fundamental ideas of the various cultures being different, the cultures themselves will develop in different rhythms. Obviously, here Vico is right. What could be more ridiculous than Spengler's assumption that every idea will take the same number of years to develop through its different phases and exhaust its possibilities, no matter what idea it is? For that matter, why should it have the same phases at all? "We find," someone might plead, "that it does;" but Spengler is not entitled so to plead; for he asserts that a given culture *must* have passed through this or that phase, unknown though the phase may be, because others have done so.

Every culture, then, is surrounded not by sheer non-culture, but by other cultures, more or less perfect, perhaps, than itself; higher or lower, perhaps, in the scale of value; but yet cultures. That is the first modification to be made in Spengler's doctrine. Secondly, while recognizing that a given culture has a certain self-consistent character, a fundamental idea which is working itself out into a complete social life, we must assert that this idea or character is not static but dynamic; it is not a single unchanged thing, miraculously born at one time, then persisting unaltered, and finally wiped out of existence, but a process of spiritual development, an idea which grows out of other ideas, in an environment of other ideas, which asserts itself against these other ideas through a process of give-and-take in which it modifies them and is modified by them in turn. In this process, culminating points are reached in which a given idea seems to have achieved an absolute domination. Here the whole culture becomes brilliantly luminous with the light of this idea; luminous to itself, so far as its own human vehicles grasp the idea consciously, luminous to us, so far as we can recreate their idea within our minds and so see what their life meant to them. But the domination is never absolute. It is always a domination over something; there are always other ideas knocking at the gate, kept out by force, whose pressure against the ring-fence of cultural life is equal and opposite to the expansive force of the life within. So



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the highest summits of culture reveal a contradiction between what they assert and what they deny—Greek liberty resting on Greek slavery, capitalist wealth resting on capitalist poverty—and in the long run the mere attempt to work out the cultural idea consistently, to *live* it (rather than *think* it) to the full, destroys the culture. But the destruction of one culture is the birth of another ; for there is no static entity called a culture, there is only a perpetual development, a development in which what has been won must be lost in order that something further may be won. And everything that is achieved in this process rests on the basis of all that has been achieved in its past phases.

Because this process is always the same, though always new, it is easy to find analogies and homologies between any part of it and any other. But when we cut it up into sections and say "here begins classical culture, and here it ends : here begins Magian culture, and here it ends," we are talking not about history but about the labels we choose to stick upon the corpse of history. Better historical thinking, deeper historical knowledge, would show us within the heart of classical culture, not a single unchanged idea, but a dynamic interplay of ideas, containing elements which, even quite early, prepare it for its conversion into Magian. It is bad history and bad philosophy alike to argue that because the Pantheon is Magian it is not classical. Follow that up, and you will find that nothing is classical. It is truer to say that the classical is not a style but an age, a process, a development, which led to the Magian by its own inner logic. Thus the Pantheon is *both* Magian *and* classical ; it is classical in the act of *turning into* Magian. And this conception of "turning into," the conception of becoming, is (as Spengler himself industriously asserts, and industriously forgets) the fundamental idea of all history.

What, then, remains of the conception of historical cycles ? Much ; for though a "period" of history is an arbitrary fabrication, a mere part torn from its context, given a fictitious unity, and set in a fictitious isolation, yet, by being so treated, it acquires a beginning, and a middle, and an end. And we fabricate periods of history by fastening upon some, to us, peculiarly luminous point and trying to study it as it actually came into being. We find our eye caught, as it were, by some striking phenomenon—Greek life in the fifth century, or the like ; and this becomes the nucleus of a group of historical inquiries, asking how it arose and how it passed away ; what turned into it, and what it turned into. Thus we form the idea of a period, which we call the

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Hellenic period ; and this period will resemble the Byzantine period or the Baroque period *in being a period*, that is, in having a luminous centre preceded and followed by processes whose only interest to us at the moment is that they lead to and from it. From another point of view, the movement leading away from fifth-century Greece, the "decline of Hellas," will figure as the movement leading up to the Hellenistic world. Was it, then, "really" a decline or an advance ? Neither, because both ; it was a becoming, a change, a development ; and the historian's highest task is to discover *what* developed, through *what* phases, into *what*. If anyone is not interested in that question, he is not interested in history.

Thus the historical cycle is a permanent feature of all historical thought ; but wherever it occurs, it is incidental to a point of view. The cycle is the historian's field of vision at a given moment. That is why it has been so often observed that history moves in cycles ; that is why, when people have tried, as many have tried, to formulate a system of cycles, that shall be "objectively valid," valid apart from any momentary point of view, they have failed with a failure whose completeness and strikingness has always been proportional to the rigour with which they have pursued the project. In a short essay, slightly written, anyone can expound a plausible system of historical cycles. Perhaps the very length of Spengler's book, and the very learning that he has lavished upon it, are well spent in revealing, as no shorter or less learned work could have done, the impossibility of the task he has attempted.

## Explorations in the Northern Fayum

by MISS G. CATON-THOMPSON

**I**N the winter seasons of 1924-5, and 1925-6 the British School of Archaeology in Egypt granted me generous facilities to go to the Fayum and conduct, on its behalf, a preliminary inquiry into the question of the significance of the obscure prehistoric period known there since many years by the quantities of fine and varied flint implements reported, and picked up, on the desert surface of the northern area, by explorers and dealers.

So little, however, was then known of the cultural horizon of this distinctive flint industry, that almost equally cogent typological arguments could be advanced for its palaeolithic, neolithic, or chalcolithic origin. Indeed the only certain and agreed fact about the implements was their dissimilarity to the flint tools and weapons of the predynastic civilizations of the Nile Valley. This fact in itself, coupled with their absence in predynastic graves, seemed at least to indicate their probable chronological priority; though on the other hand one could speculatively counter-balance against this view our complete ignorance about the cultural inter-relations existing between the men of the desert and the Nile Valley dweller, so sharply distinguished, even now, the one from the other. My own attitude, as I considered the question before me, was therefore one of complete open-mindedness, or perhaps vacuity; the presence of ground hard-stone, and polished and chipped flint axes, noted in museum collections from the Fayum, seemed to me a matter of fundamental importance; but there was no means of estimating their age—of knowing whether or no they were contemporary with the more abundant pressure-flaked implements and arrow-heads. The collections were sweepings off the desert surface, of value only in so far as they whipped up interest in the problems lying at the back of them.

The neglect which this Fayum desert had received from archaeologists was due largely to the difficulty of maintaining permanent camps so far from fresh water. I decided therefore that I would endeavour as an experiment to overcome this difficulty by means of car, rather



PLATE I



THE "CROCODILE" RIDGE  
Ph. G. R. Carline



## EXPLORATIONS IN THE NORTHERN FAYUM

than camel, transport. This measure, on the whole, justified itself and enabled a party of 14 to maintain themselves for some weeks in a camp 20 miles from water, measured on the map, and considerably more in reality owing to the twists and turns of a self-made track in rough country.

The most striking thing perhaps which meets the eye on nearing the edge of the Fayum basin from the north-west—the Cairo direction—is the sharp topographical antagonism between the cultivated zone of the southern area of the depression, with its numerous prosperous towns, villages and rich agricultural activities, and the naked desert and steep, gaunt boundary scarp of the northern area :—the brilliant greens and blues of vegetation on the one hand, and the still more beautiful golds and ambers of the sands and rocks on the other. The sight startles the mind into a vivid realization of the transmuting power of irrigation—the power of controlled water moulding and clothing the earth's features on one side ; the power of unchecked wind, sculpturing, disintegrating, annihilating them on the other. Not always has the whole of this northern area been desert ; traces of a vanished irrigation system, marked by long strips of derelict embankment, may still be seen in the basin west of the Graeco-Roman ruins of Dimê.

Curious results of wind-driven sand erosion on the comparatively soft tertiary rocks of the northern Fayum are frequently met. The resulting shapes are controlled, in the first place, by the fact that many of the sandstones and sandy limestones are of unequal hardness, the harder parts or concretions being usually either round, or lenticular. The effect of wind-action on such rock is very well seen south-west of Dimê, where a fine-grained sandstone forms a ridge running from north to south.

<sup>1</sup> “ This sandstone is concretionary, the concretions being lens-shaped, and averaging from 10–12 feet long. In the more sheltered parts the softer rock between the concretions has not been worn away, and the surface is more or less regular, but in the exposed areas every stage in the weathering out and final disintegration of the concretions can be seen, presenting a most remarkable sight. (Plate 1). The concretions lie with their long axes north and south, and as they gradually emerge from the surrounding rock, the windborne sand wears them away as with a file, accentuating the tapering ends and

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<sup>1</sup>The following description is contributed by Miss E. W. Gardner, geologist to the expedition.



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gradually reducing them in size. Before the process has gone very far the softer material has been scoured away from all sides of the concretions, and they are left standing out prominently on mounds, which remain just so long as the harder material forms a protection for them.

“The undercutting of the concretions, together with the tremendous strain set up in the rocks by the variation of temperature during night and day, result in another remarkable feature—the repeated splitting across of the concretions at right angles to their length. This cracking occurs at very regular intervals, and is possibly located along original lines of weakness. The effect is that of a series of enormous vertebrae of some giant reptile petrified in the rock, an effect well seen in the photograph. The sight of hundreds of these monsters all facing in the same direction is most extraordinary, and earned for this particular region the name of ‘The Crocodile Ridge.’ The resemblance to giant reptiles is still further accentuated by the original irregularities in the rock, some weathering out as spine-like ridges along the back, others giving the appearance of scales.”

“As the undercutting is carried further, first the smaller ‘tail’ vertebrae, and finally the larger blocks roll down the sides of the mound on which they originally perched. This result is hastened by the sand, which drifts under the concretions, and acts cumulatively as a powerful lever, turning the segments first on end, and finally upside down. In this way ‘tails’ may be found separated by a considerable distance from their ‘bodies.’ This process marks the beginning of the end in the life of the ‘crocodile’; the ‘vertebrae’ become smaller and smaller, and the mound is soon reduced to the general level, while other new monsters arise to carry on the breed.”

The lowest point of the basin, separating cultivation and desert, is filled by a sheet of brackish water—the Birket el Qarun, whose surface lies 148 feet below mean sea level at Alexandria. (Plate II). This lake, about 25 miles long and 5 miles wide at its broadest point is but the lingering remnant of far more extensive predecessors. Old shore lines and lacustrine deposits rising to a height of 222 feet above present lake level, with an abundant sub-fossil fresh-water, vertebrate and invertebrate, fauna, are particularly well developed in certain parts of the northern desert area, with more limited counterparts on the southern side; whilst a still higher series of older quaternary fresh-water deposits cap certain high ridges now forming a watershed, at a height of 260 feet over present lake—a height not only sufficient to fill up the

PLATE II



WEST END OF BIRKET EL QARUN FROM THE TERTIARY SCARP

*Pl.* E. W. Gardner







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Fayum basin itself to the brim, but which would link it up (if the level of the divide was approximately the same in those times), in a continuous sheet of water with a great subsidiary depression to the south-west, the Wadi Rayan. This last event would seem to carry us back into the middle palaeolithic age; the archaeological associations belong to Mousterian types; they may even subsequently prove, as a result of further investigation and wider co-ordination, to conform to Déperet's Monastirian stage. Be that as it may, it is, however, with neither of these past stadia in the history of the lake that we must link up the "Fayum industry" which provided the main objective to the expedition: *their* numerous sites lie, as we were soon to find, strung out on a long line, at a lower horizon than either of these last, consistently at about 190 feet. (See map, where sites are indicated by alphabetical letters). Now in connexion with the distribution of these "Fayum industry" sites two interesting facts emerge as a result of Miss Gardner's close contouring and detailed geological investigations (the first specialized results of which are embodied in her paper in the *Geological Magazine* for September 1927). One is that these sites are concentrated around the base of sheltering stacks of lacustrine sand-rock representing the attenuated survival of deposits of the older 222 feet lake: in Miss Gardner's own words "since the level at the base of the lowest of these outlying masses is in the neighbourhood of 190 feet, it follows that the water of the 222 feet lake had disappeared, and sufficient time had elapsed for the deposits to be hardened and greatly eroded before the Fayum industry people lived among them."

The second fact of interest is that these sites—characterized by a débris of rough sherds, flints, both chips and whole implements, and hammer stones, lie some 15 feet *below* a well-marked shore-line which may be traced intermittently over an extensive area; this runs at 205 feet over present lake, and possesses a fauna differing from that of the higher lacustrine levels. It becomes evident then that our people arrived in the Fayum not only long ages after the 222 feet lake had become a thing of the past, but that most of their main sites were founded after the 205 feet lake level had fallen from its maximum. A correlation with any fixed point in time for these geological events is impossible—the latitude is too great: all that emerges with certainty is that our 205 feet level is long, long post-Mousterian—long enough for deposits of that age to be left as old fluvial or lacustrine cappings to a present hog-back ridge; and for even yet another high-level lake to lay down thick deposits, shrink and expose its old bed to consolidation

PLATE III



KOM W. COOKING POTS IN SITU

Ph. G. Caton-Thompson





## EXPLORATIONS IN THE NORTHERN FAYUM

and subsequent scour on a large enough scale to remove, over a considerable area, some 32 vertical feet of its material. These facts alone would, personally, compel me to preclude all thought of a palaeolithic origin, even a late one, for the flints in question, even were the archaeological evidence we succeeded in obtaining less convincing on its own independent merits. For this evidence we are mainly indebted to a large settlement, or kitchen-midden, marked on the map as "Kom W." This mound, some 600 by 400 feet in diameter, though by no means prolific in proportion to its size, furnished enough material to place the enigmatical "Fayum industry" at last in its true context; for, contained in its 5 feet or so of deposit were found whole pots of the same rough-faced, hand-made pottery (plate III) whose sherds we had noted on surface sites, definitely associated with many of the well-known types of flaked flints, and above all with an abundance of fine polished and chipped flint axes, and rare, ground basalt specimens as well. The deposits in which these were embedded, in some places so consolidated by salt that a hammer and chisel had to be employed for the disengagement of the object, were archaeologically homogeneous throughout, no variation of type in the specimens being perceptible. The pots were either large, round bottomed, straight-sided cooking pots of primitive aspect, dull red or grey-red in colour, or small cups and bowls, equally undistinguished by salient feature. One form only stands apart sufficiently distinctive to act in future investigations as a precious touchstone in the geographical distribution of the people who made it. This is a shallow rectangular bowl with a rim characterized by four peaks, defining the corners. Although only two complete specimens were found, one of these being now in the British Museum, the other in the University College collection,<sup>2</sup> numerous rim fragments show that the bowl was common. I myself was unacquainted with the form in early Nile Valley potteries, nor did exhibition in London produce any suggestions from Egyptologists concerning its affinities. It was only in subsequent research into Nubian and "pan-grave" cultures (where I suspected our Fayum connexions might lie) that a similar type appeared, figured in the British School of Archaeology's volume in *Rifeh*, pl. xxv, 44, and where its "pan-grave" origin—XIII–XV dynasties—is well attested. It will be remembered that these "pan-grave" folk, so called on account of the shape of their graves, are, throughout a considerable period, sporadic intruders into the Nile

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<sup>2</sup> Figured in *Man*, 96. 1925. Plate K, no. 2.

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Valley in advanced dynastic times. Their most characteristic pottery is wheel-made, incised in rectilinear pattern ; at the same time they continued the manufacture of " black topped " pottery retaining the characteristics of the predynastic technique : indeed in many other

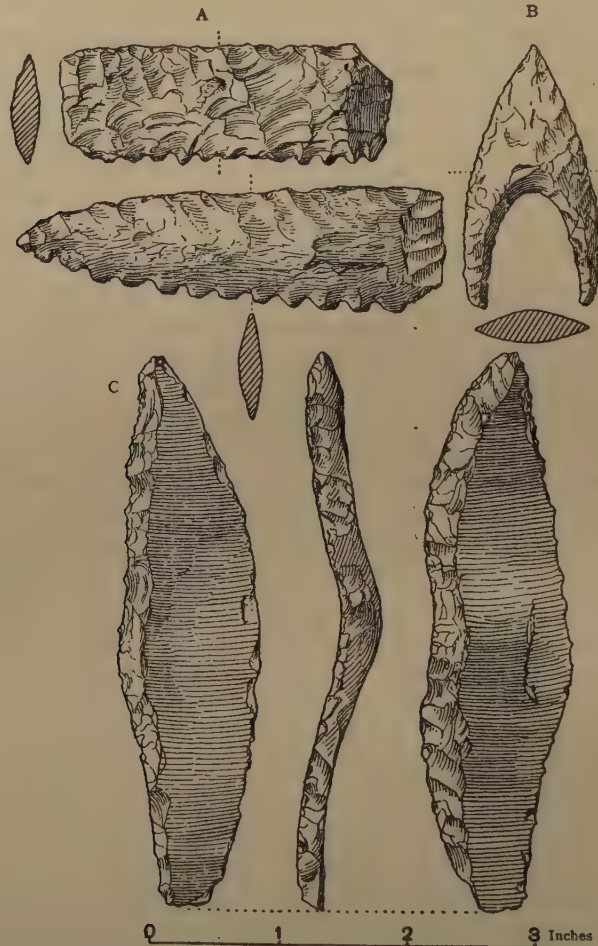


FIG. 1. TYPES OF FAYUM INDUSTRY FLINTS  
A—Sickle flints. B—Concave base arrowhead. C—Side-blow flake.

respects they show a material culture singularly reminiscent of early predynastic Egypt, though they had out-grown the use of flint implements in favour of metal. The discovery at Rifeh, therefore, in such late associations, of a bowl whose form forbids the use of wheel, is



PLATE IV



BASKET FROM GRANARY PIT

*Ph.* G. Caton-Thompson



## EXPLORATIONS IN THE NORTHERN FAYUM

interesting. I am not, be it understood, suggesting for one moment that our Fayum industry with its hand-made, monochrome, unornamented wares, and perfection of flint technique, has any *chronological* connexion with XIII-XV dynastic "pan-grave" times. But the vase type referred to is so unusual that it is impossible to pass over the coincidence, or curb a suspicion that it may provide a clue to ceramic tradition in the unexplored desert.

Material of cross-dating value was, indeed, completely lacking in our settlement; the place provided, however, unequivocal evidence of the neolithic status of its inhabitants; hand-mills, sickle flints (fig. 1, A) and the bones of sheep or goat, pig and ox being relatively abundant. For ornament ostrich egg and green microcline felspar were used for working into beads; whilst Mediterranean or Red Sea shells, such as *Cardium* and *Pectunculus*, were perforated through the umbone for suspension. Not a trace of metal object, or metalliferous ore was found. The art of weaving was indicated by limestone spindle whorls. Curious circular holes riddled the floor of the mound, sunk into the underlying lacustrine sands of the old high-level lake upon which it rested; these, too small and shallow for the most part to be true "fonds de cabanes," were filled with darker midden earth than the surrounding deposits, and contained minute traces of charcoal. Many sherds, and sometimes a whole cooking pot came from these holes; that is intelligible; what is less obvious is the inclusion of arrow heads and axes and other flint implements in their contents. Altogether 17 different types of implements were collected, of forms well-known from surface collections. Of arrowheads the large concave-base type (fig. 1, B) was the form found in the mound, the small tanged type (fig. 2, B) was represented by one specimen only (from a second mound some miles distant), but this was too near the surface to be accepted without further corroboration as contemporary.

Both types may be found on the Fayum desert in very large quantities, the small tanged form showing a remarkable range of ingenious variation. Unfortunately we are still badly documented on the history of African arrowheads and their distribution. The concave-base type is certainly early; it was found at Badari with the oldest predynastic civilization—the Badarian—and when figured from other places in connexion with predynastic graves, either in Nubia or Egypt, it seems to be confined to the earlier periods. Its geographical extension appears to be limited in comparison with that of the small tanged form: the Fayum is the main centre of its abundance, though



it appears at those three eastern outliers of the industry—Wadi el Arish, Gaza, and Askalon. To the west it has not yet been reported from Siwa, though other flints of Fayum type are known from there; nor is it included except in ultra-microlithic form, in any collection known to me from Algeria, Tunisia or Morocco.

The small tanged type, on the other hand, has hitherto been noted as appearing later on the scenes of predynastic times, and is in evidence not only in the royal tombs of the protodynastic age, but onwards without interruption, as late as the VIIIth century B.C.<sup>3</sup> Its distribution throughout the whole of North Africa is comprehensive.

I have met with no specimens of the usual type of transverse arrow-heads in the Fayum. I would, however, like to suggest for consideration that the triangular flint (fig. 2, A) with its broad chisel edge and bluntly pointed apex, may conceivably be intended for this use.



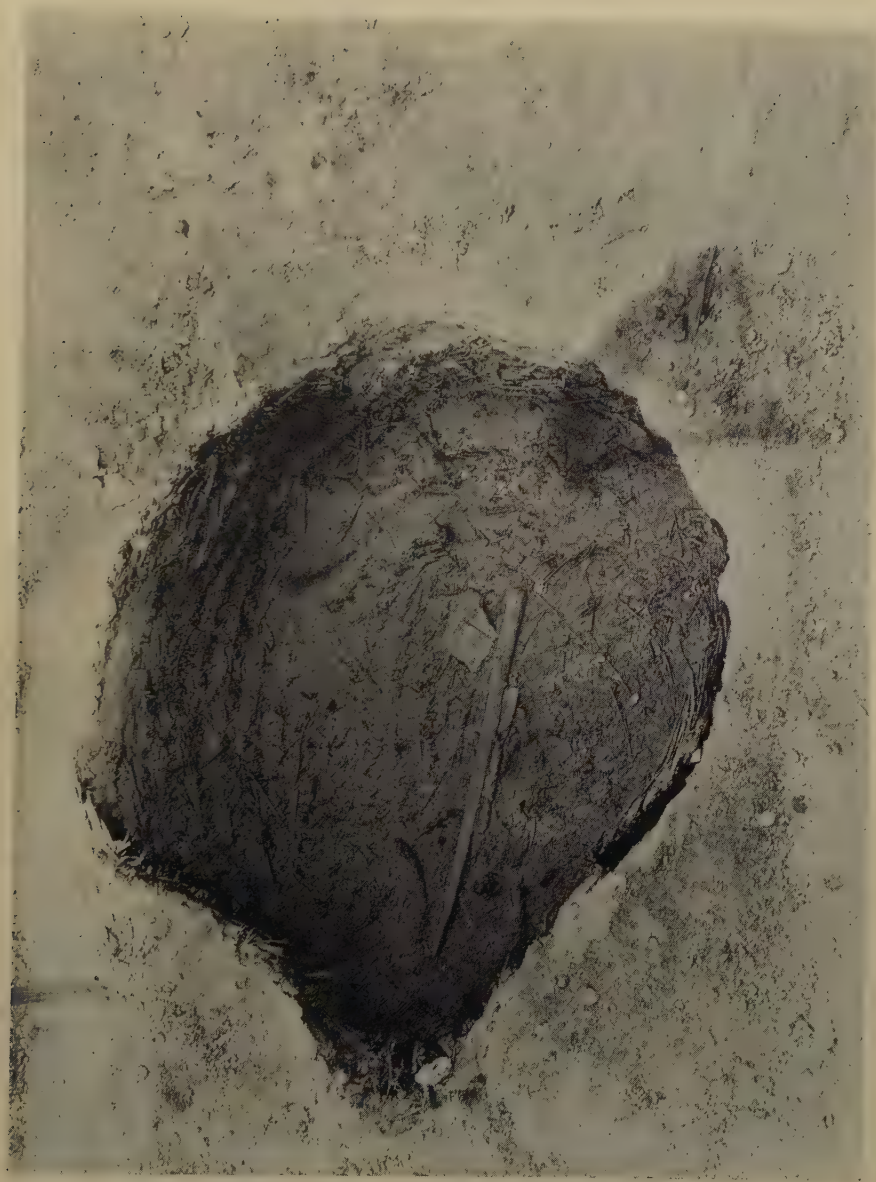
FIG. 2. A—Chisel-arrowhead B—Tanged arrowhead

The general facies of Kom W and its contents differs in a striking fashion from predynastic settlements in the Nile Valley, where even the earliest shows a far more advanced culture.<sup>4</sup> That these Fayum mound dwellers were permanently established inhabitants, and not wandering tribes in a nomadic or semi-nomadic state of organization, appears to be attested by our subsequent discovery of their granary site (K ridge on

<sup>3</sup> *Sudan Notes and Records*, 1919. Vol. II, no. 4.

<sup>4</sup> A possible exception may have to be made for a primitive settlement at Helwan, near Cairo, discovered by Father Bovier Lapi  re, which is unpublished, and only very imperfectly explored. The site contains "fonds de cabanes", rough pottery, and fragments of polished axes, and is clearly quite unconnected with the well-known Helwan microlithic industry.

PLATE V



SICKLE IN SITU IN STRAW LINED GRANARY

*Ph. G. Caton-Thompson*





## EXPLORATIONS IN THE NORTHERN FAYUM

the map) consisting of 63 sunk pits, of which 48 were, or had been, lined with coiled wheat straw. It seems that these were prepared by first digging a circular hole of the desired size in the shelly gravel which capped the ridge : a coating of wet mud was next applied to floor and sides, serving not only to bind the loosely-consolidated deposits from crumbling in, but also as a retaining plaster for the straw lining ; this was evidently coiled up "in situ," floor and walls being made in one piece, fitting snugly into the circumference of the hole. Plate v shows an example, about 2 feet 6 inches in diameter and 10 inches in depth ; in some cases the lining had become partially detached and was discovered doubled in and sagging.

The majority of these silos were empty, but seven of them still contained small quantities of wheat and barley, and polygonum seed ; in other granaries we found pots similar to those discovered in the middens, one of them containing fragments of coarsely woven linen ; also objects of basketry, including flat platters or dish covers, and a fine example of a boat-shaped basket 41 cm. in length, 25 cm. wide and about 14 cm. high (plate iv). This also was made in a coiled technique, the monotony of the horizontal ribbing being broken by 16 groups of three-strand vertical lines in a darker colour. The basket is made of two materials, but the nature of these cannot be more closely defined by the Royal Botanical Gardens at Kew, than "stems of a dicotyledonous plant and of a grass." But perhaps the most interesting find of all inside a granary was a wooden sickle 51.5 cm. in length with three saw-edged flints in position (plates v, vi). The flints are still firmly held in the groove cut to receive them (which starts at a distance of 13 cm. from the butt) by a dark glutinous substance. The end flint is snapped in two, and one may suspect that accidents were not infrequent, on the evidence of the other two blades which fit neither each other, nor their retaining groove. The curve of the shaft inclines to the left if held in the right hand at the proper cutting angle, thus embodying, in its primitive way, a principle of true sickle curve, so well understood in the pre-Sumerian specimens (made of clay), and further elaborated in the Middle Kingdom example known to us from Kahun, which though wooden-shafted like ours, has its prototype in the mandibular ramus of an ox. The find of this interesting specimen, in conjunction with the pottery, proved conclusively the connexion between middens and granaries. Wide questions are thereby opened up concerning the origin and spread of early agriculture, which we must hold in suspense until a satisfactorily

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established relative dating for the Fayum midden industry can be obtained. This, I think, will probably be achieved only by the discovery of the graves—more likely to produce material of cross-dating value than the mounds. Every endeavour will be made next season to obtain these.

The agricultural question as it stands in the meanwhile has recently been the subject of a very thorough inquiry by the President of the Anthropological Institute.<sup>5</sup> He has shown the logical necessity—owing to the geographical distribution of the wild plants—of attributing the origin of agricultural discovery to near Asia; the knowledge of cultivated cereals—wheat and barley—had spread thence to the Nile Valley certainly by predynastic times; but he makes it clear that no unimpeachable record of it exists there before the *middle* predynastic; and that fact, unless disproved by well-authenticated discoveries of yet earlier grain in Egypt, fits in with what we know to have been an influx of Asiatic influence and products—wavy-handled vases and pear-shaped maces in particular—at just that same time. Should further excavations prove the Fayum granaries to be earlier than the middle predynastic period in Egypt we shall have to face the uncomfortable yet supremely interesting task of revising this estimate, and attempting a reconciliation between many apparently incompatible archaeological facts.

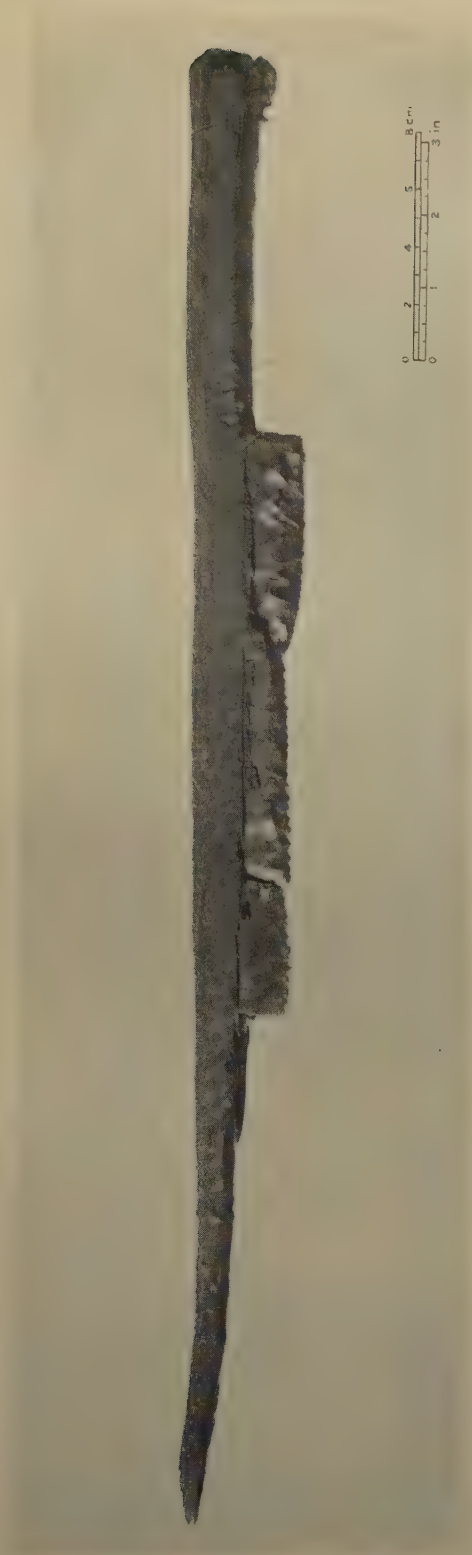
In the Fayum we are on the threshold of obtaining extensive vistas of fresh archaeological material, affecting wide areas. The most recent work of the Desert Survey<sup>6</sup> has revealed another hitherto unknown region of oasis formation, the Qattara, forming a link between the Fayum and the Siwa chain of depressions separated from each other by some 300 miles of desert. If, at the epoch of the Fayum culture these desert conditions had already begun to set in, as there are both geological and archaeological grounds for believing,<sup>7</sup> this route at least, with its abundant water supply at fixed points, would offer no difficulties of movement long ages before the advent of camel transport, and must have been in immemorial use. In this direction aerial survey will be an incalculable boon to archaeology, revealing unsuspected channels of communication to and from the desert interior impossible to detect by any other means.

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<sup>5</sup> *Nature*, 18 June 1927.

<sup>6</sup> See Dr. J. Ball, *Geographical Journal*, July, August and September 1927.

<sup>7</sup> See our paper, *Journal Royal Anthropological Institute*, vol. LVI (1926) 304, 313.



SICKLE WITH FLINT BLADES  
P<sup>h</sup>. C. O. Waterhouse





## EXPLORATIONS IN THE NORTHERN FAYUM

The Siwa group of oases and the Kharga oasis—the Baharia has so far yielded no information—share, on the evidence of the flint implements from them, a neolithic culture in common with the Fayum. One of the most specialized of Fayum implements—(fig. 1, c) so specialized with its bulb of percussion, produced by a side blow on the core, lying in the *centre* of two lateral wings, with alternate retouch of the margins, that its presence must certainly denote connexion with the Fayum culture wherever it is found—is included in the collection from Siwa in the Cambridge Ethnological Museum.

These places await scientific exploration with strict archaeogeological reference to each other's evidence. Wide as is the scope of research in these directions, to name but a few for this particular period of human history, the scientific potentialities of Fayum exploration itself are full of promise. Material of importance to historical archaeologist and vertebrate palaeontologist abounds. The famous Eocene bone beds, discovered by H. J. E. Beadnell, await a worthy successor to the late Dr C. W. Andrews ; their working, not only at the points where he collected, some 20 miles from water, but far beyond, in untouched fields, no longer presents the difficulties of 25 years ago. The hills, capped by a great sheet of basalt, and dominated by the imposing twin peaks of Widan el Faras, lead in a series of steep scarps up to the level of the Libyan desert, nearly 1000 feet above lake level. After three unavailing attempts to force our car up on to the middle scarp in which the bone beds lie, we hit upon a practicable line of ascent, and on 23 January 1925 had the satisfaction of proving, in the interests of future expeditions, their accessibility to motor transport. The initial climb ended, the way follows for some miles across the broad gentle slope of the middle scarp, through desert scenery of impressive grandeur; buttresses and cliffs of alternating rose red and golden sandstone, in a variety of brilliant shades, guard the approach to the main range of the Gebel el Qatrani, with its grim capping basalt sheet, cascading down steep slopes in giant falls of subterranean blackness. The way is strewn in places with great trunks of fossil wood, carried down, as Beadnell<sup>a</sup> first suggested, from the south-west continental interior, together with mammalian bones, by a great river draining into the estuary which then covered the Fayum area, as the tertiary sea gradually receded northwards.

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<sup>a</sup> H. J. E. Beadnell, *Topography and Geology of the Fayum Province*.

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The bones of strange ancestral mammals strengthen the overwhelming impression of a return to an extinct, uncanny, strangely beautiful, pre-human world. The region shows, compared with the low desert, few traces of human visitation. The little-used camel track to the Baharia Oasis passes through it for some distance: ancient flintmine workings on a hill top: remains of a stone circle of roughly-piled up blocks of basalt: an inscription on a rock,  $\parallel \parallel \overset{\circ}{\underset{\parallel}{V}} = \circ \parallel \parallel$ : the 25-year-old traces of the Beadnell-Andrews camp: these, and above all in arresting interest, a long straight four-mile thread of ancient road running north (plate VII).

This road was first noted by Beadnell in his official survey memoir, but he gives no photographs or details as to structure or probable age, beyond its label on the map "ancient quarry road." Since then no further details have, to my knowledge, been added. The road, at its lower extremity, availing itself of gaps in the scarp immediately west of the little dynastic temple of Qasr el Sagha, is not, in fact, recognizable as man's handiwork until it emerges on the level of the middle scarp, whose main features we have already indicated. Here, with the unbroken width of the scarp plain to cross in its progress northwards to the hills—its ultimate destination—it straightens out into a line of paved track, about 7-8 feet broad, carefully laid with slabs of whatever rock was handiest to collect at that point of its course. Much of this is rather friable sandstone, which has weathered badly, and forms a surface, compared to which the stony desert on either side is smooth going. The slabs, however, though wide interstices separate them, still lie fairly flat.

At another point the sandstone paving is succeeded by a stretch of unusual—perhaps unique—road metal, the logs of fossil wood already referred to laid side by side, sleeper fashion across the road. The trunks naturally vary in size, but the average diameter is about 1 foot. Two big dumps of basalt blocks by the wayside give a clue as to the road's ultimate destination; but no pottery has yet been found to give a clue as to its makers. Nearing the final hills, the road becomes more broken—in places even difficult to trace—owing to destructive drainage from the hill slopes; but we picked it up again under the frowning peaks of Widan el Faras, at a point where it is raised and cambered above the surrounding level, in order, presumably, to avoid the racing spates in time of storm. Following on another  $\frac{1}{4}$  mile we suddenly come to the abrupt termination of our quest, sharply brought up against a steep hill-side, down which has shot a dark mass of basalt



PLATE VII



ANCIENT QUARRY ROAD RUNNING NORTH ACROSS THE MIDDLE SCARP TOWARDS THE TWIN PEAKS  
OF WIDAN EL FARAS

*Ph. E. W. Gardner*



## EXPLORATIONS IN THE NORTHERN FAYUM

blocks from their sill-bed upon the summit : a nature-worked quarry (plate VIII). Not far away a large, sunk, sand-filled hollow, fringed with corrugated Roman pottery litter, gives a first clue as to the probable quarrymen. The presumptive evidence seems strong, supported as we were afterwards to find it, by lumps of basalt, and Roman sherds at a low level, far away, near the present lake. On the other hand, none of the Graeco-Roman towns and temples of the Fayum show any trace of basalt in structure or decoration. Dimê, an important and extensive ruin calling for excavation, lying 4 miles nearly due south of the road's termination near Qasr el Sagha, shows, superficially at least, not a trace of this material ; nor does the other nearest Ptolemaic town of Kom Ashim, though this has been extensively excavated, and lumps of basalt may actually be found on the low desert in its direction. Road metal for export ? We know of none.

The only possible alternative to the road's Roman origin would seem to lie in connexion with the dynastic temple of Qasr el Sagha : its termination, a great elongated dump of colossal, weathered basalt blocks, is within a stone's throw of the building. The temple is built of giant blocks of sandy limestone, and is stripped of all adornment ; its very date is uncertain. But such passing attention as we—not Egyptologists and engaged on other work—were able to give it, indicates that it is not later than the Middle Kingdom : I would myself suggest that it was originally built in Old Kingdom times, and continued in use up till the Middle Kingdom, my reasons being based on the presence in its immediate vicinity, concentrated in regular "workshops" of limestone and alabaster débris, of great quantities of crescentic, hollow flint grinders, which are known to date from protodynastic to Old Kingdom times ;<sup>9</sup> and fragments of contemporary, spouted vases. That the place, however, was also occupied in the XI–XII dynasties is certain. Not only are shaft-graves of that age within a stone's throw—we collected a scarab, and elements of a wooden funerary boat from old spoil heaps and ravaged fillings—but we discovered during the first season a small cemetery of 41 graves of this age at the base of the lowest scarp.

Now, in addition, a fragment of inscribed, polished basalt from the temple area seals the evidence for the later date. But this basalt is a fine-textured stone, unlike our coarse-grained local material, and seems

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<sup>9</sup> Bet Khalláf. Hierakonpolis. Sakkara. Temenos of Osiris, Abydos.



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unlikely, curiously enough, to have the same source. The probabilities of our road origin, therefore, seem to lie with the Romans ; but the subject is well worth following up in further study and greater leisure.

The archaeological work in the Fayum of the British School, starting with knowledge at zero, has established that certain types of pottery, flint and bone implements, axes, granaries with wheat and barley, and basketry, are contemporary with one another ; investigations must go still further and tell us their age relatively to Egypt, incidentally throwing light, maybe, on the Libyan stratum in Crete ; it must tell us the burial customs of these people, and their physical aspect. It must solve the arrowhead chronology, and extend our knowledge of the finer forms of handicrafts of the period. The Fayum geological work, starting with knowledge little above zero as far as concerned the Pleistocene, has established the existence of at least three distinct lake periods, and their attendant fauna, where before one only had been suspected ; it has linked up one of these specifically with the Fayum industry. It must go further and coordinate these episodes with geological events in the Nile Valley and endeavour to fit each one within its framework of pre-history.

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Arrangements are being made for a continuation during the coming season of the work begun in the Fayum on behalf of the British School of Archaeology in Egypt, by Miss G. Caton-Thompson. The Royal Anthropological Institute have authorized her to make application on their behalf to the Department of Antiquities for a renewal of concession ; and have appointed her director of the excavations. The party will again include Miss E. W. Gardner who will continue her work on the fauna and past history of the lake levels. For this purpose Miss Gardner has been granted a year's leave of absence from Bedford College where she is Lecturer in Palaeontology.

Plate 5 reproduced from *Journal Anthropological Institute* (1926) lvi, by permission of the Institute.

[EDITOR]

PLATE VIII



TERMINATION OF ANCIENT ROAD AT BASALT SCREE, NEAR WIDAN EL FARAS

*Ph. E. Benson*

*facing p. 340*





## Notes and News

### UR OF THE CHALDEES

Seldom in the history of excavation has there been such a magnificent harvest as that yielded by the last season's work at Ur. The expedition is jointly supported by the British Museum and the University of Pennsylvania, and during the five years it has been in existence it has been directed by Mr C. Leonard Woolley. Previous campaigns have been devoted to the clearance of buildings and of the great Ziggurat; last winter three cemeteries were discovered and partially cleared. The oldest is considered by Mr Woolley to belong to about 3500 B.C., and he regards this date as a conservative one. The graves contained a wealth of gold and copper objects, together with some of silver. Most startling of all, grave 580 contained fragments of wrought iron.

The objects discovered have been on exhibition at the British Museum throughout the summer. The same grave 580 contained also a solid gold adze of excellent workmanship, with a cylindrical hole for insertion in the handle; a gold spearhead with a long tang; two small gold chisels; a small silver jug and a silver belt; carnelian beads and beads of gold filigree. All these are assigned to about 3500 B.C. In addition there is exhibited an inlaid gaming-board perfectly preserved; a limestone relief showing a chariot belong to the "1st Dynasty of Ur, 3100 B.C." as described on the label. Over three hundred cylinder-seals were found, and many are exhibited together with photographs of flat impressions made upon plasticene—an admirable method of displaying the design and much better than exhibiting plaster impressions, which require a side light and are seldom seen to advantage in museum cases.

We reproduce, by kind permission of the Trustees of the two Museums, some impressions of the seals. They represent the usual mythical scenes of heroes and animals. The top and bottom ones date to about 2600 B.C., and the two middle ones to about 3200 B.C.

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A large plan of Ur, showing the buildings which have been uncovered, is shown ; and there is a mosaic of air-photographs of Ur and its surroundings. One of the most pleasing features is a series of water-colour drawings by Mr A. S. Whitburn. There is a charming distant view of the great Ziggurat, reflected in mirage, and standing out boldly against the hazy blue ; the desert atmosphere is there. A reconstruction of a typical house of Abraham's time—about 2000 B.C.—is also reproduced as the frontispiece of this number, by permission of the Trustees of the two Museums. There are also coloured reconstructions of the courtyard and sanctuary of E-Dub-Lal (about 1400 B.C.), and of the courtyard of the Gig-Par-Ku of Nin-Gal (about 2000 B.C.)

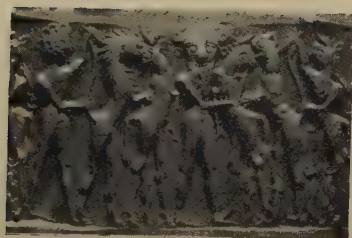
In our editorial notes we have referred to the future plans of campaign, and we would again urge our readers to support this epoch-making work in the most practical way possible.

### STONEHENGE AVENUE

In order to ascertain whether the Avenue crossed the modern Stonehenge-Amesbury road, trenches were dug on 28 June 1927 at the southern edge of the field which lies between that road and the farm buildings of West Farm, Amesbury.

Air-photographs show the lines of the Avenue ditches running down to the Stonehenge-Amesbury road, but owing to the fact that the field on the south side is down to pasture no traces of the ditches can be seen there. Mr Crawford had marked down the probable line of the continuation of the Avenue, and trenches were cut at right angles to this line. There were no surface indications of the ditches.

The left hand or eastern edge of the Avenue was revealed as a flat-bottomed ditch 1 foot 10 inches below the surface and 10 inches below the level of the undisturbed chalk. The width of the flat bottom of the ditch was 1 foot, and at the level of the undisturbed chalk the ditch was 2 feet wide. There was no increased depth of humus over the ditch. Beneath the humus over the ditch the soil consisted of earthy flint rubble, but in the filling of the ditch proper there was a sloping silt of earthy flint rubble with a considerable admixture of chalk. This silt sloped from the eastern or outer side down to the western or inner side of the ditch, and suggests that it must have come in from the former edge. There were no indications of a bank but the direction of the silting implies that there was one outside the ditch on the far side of the Avenue. Near its Stonehenge



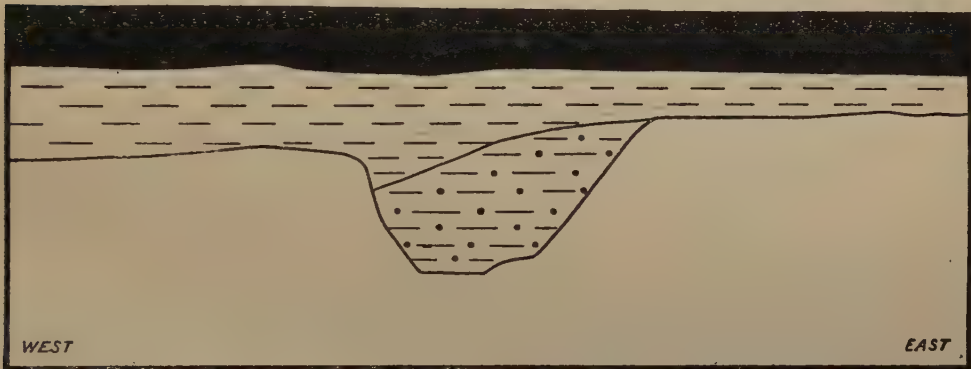
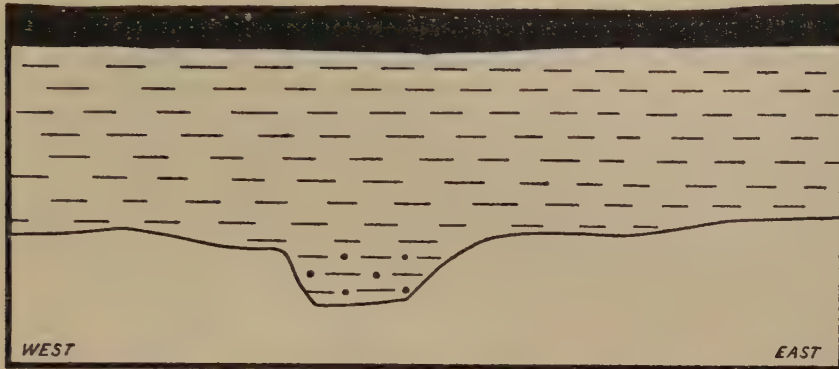
SEAL IMPRESSIONS FROM UR





## NOTES AND NEWS

termination however the bank is inside the ditch. A few scraps of pottery, mostly medieval, and some fragments of bone and two or three flakes were found in the top soil near the ditch. No pieces of sarsen or blue-stones were discovered.



0 1 2 3 FEET

Humus

Earthy flint rubble with chalk

Earthy flint rubble

Undisturbed chalk

SECTION OF DITCHES OF STONEHENGE AVENUE

The western or right hand ditch of the Avenue was found in that portion of the field which had been cultivated up to recent times. Consequently the humus and top soil was deeper over that area. The ditch was flat-bottomed with a steep side to the west and a more sloping

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side to the east. The bottom of the ditch was 8 inches in width. Below the level of the undisturbed chalk the filling of the ditch had a quantity of chalk in its composition, but this layer did not slope, as in the eastern ditch, but lay horizontally. There was no indication of a bank.

The distance between the ditches, measured from centre to centre, was  $110\frac{1}{2}$  feet. The variation in the width of the Avenue is a remarkable feature. At the Stonehenge end it is 70 feet, between the Old and New King barrows 68 feet, halfway between the King barrows and its crossing of the Stonehenge-Amesbury road 84 feet, and immediately to the north of the road 113 feet.

Some search was made along the outer edge of the Avenue but no stone or post holes were found. There were however indications that trees had formerly grown in the vicinity of the left hand ditch.

## BIBLIOGRAPHY

STUKELEY.—*Stonehenge*, 35.

HOARE.—*Ancient Wilts*, i, 158.

HAWLEY AND NEWALL.—*Antiquaries Journal*, v, 23.

STONE.—*Stones of Stonehenge*, 125.

CRAWFORD.—*Observer*, 22 July and 23 Sept. 1923.

*Antiquaries Journal*, iv, 57-59.

*Illustrated London News*, 18 Aug. 1923.

*Ord. Survey Prof. Papers*. New series, v, 23.

*Wilts. Arch. Mag.*, xlii, 405-6.

R. C. C. CLAY.

## CAERLEON

We quote the following, from a leaflet which has recently been circulated, because it contains the latest and most authoritative account of the Roman legionary-fortress.

“Caerleon, as its Welsh name implies, represents ‘the camp of the legion’—in particular, of the Second ‘Augustan’ or ‘Royal’ Legion, which made its home there at some uncertain date between 50 and 75 A.D. This legion had formed part of the Roman army of conquest in the year 43, when it was led by a future Emperor of Rome across the south of England; and, in one place or another, it remained in Britain until the fourth or perhaps the beginning of the fifth century. How long it was actually stationed at Caerleon we do not know, but its arrival on the banks of the Usk (whence the new fortress received the name ‘Isca’) was of twofold significance. It marked in effect the



**PLAN OF ROMAN BUILDINGS IN CIRENCESTER, GLOUCESTERSHIRE**

**LEGEND:**

- A = BUILDING EXCAVATED IN 1850+
- B = " " " " 1908
- C = " " " " 1926
- AMPHITHEATRE " " " " 1908-26-

**SCALE OF FEET**  
 100 50 0 100 200 300 400 500 600 700 800  
**SCALE OF METRES**  
 30 20 10 0 50 100 150 200 240

**COMPASS ROSE:**  
 N (North), E (East), S (South), W (West)

**Key Features and Streets:**  
 - **Streets:** MILL STREET, HIGH STREET, THE BROADWAY, CROSS STREET, BACK STREET, NORMAN STREET, GOLDCROFT COMMON.  
 - **Buildings:** NORMAN MOTTE, CHURCH, PRIORY, AMPHITHEATRE, CORNER-TURRET FOUND HERE 1905.  
 - **Other:** RIVER USK, TO NEWPORT, FROM PONTYPOOL, TO USK.

NOTE.—The field to be excavated in 1927-8 is that covered by the compass points.



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beginning of history in western Britain; it marked also the establishment of the final frontier of the Roman Empire in north-western Europe. With Chester and York, it formed the permanent base of the system of lesser forts and military roads whereby the richer lowlands of England were shielded from the mountaineers of Wales and northern Britain. Unlike York and Chester, however, both closely encumbered with medieval and modern buildings, the present township of Caerleon but thinly covers the site of the ancient fortress. Some 60 acres of vacant land within and around the defences are known to contain the remains of Roman buildings. In short, Caerleon is, on the one hand, a site historically of European interest and, on the other hand, the only site of its kind in Great Britain where exploration on any considerable scale is still feasible.

“The visible evidences of the fortress are not numerous but they are sufficient to indicate both its extent (some 50 acres) and the approximate position of the settlement which, here as elsewhere, grew up outside the walls of the fortress. The enclosed area was nearly square (540 yards by 460 yards) with characteristically rounded corners fortified by internal towers; the defensive system included an earthen bank revetted externally by a stone wall, which, at the southern corner still stands to a height of 10 feet. Beyond this lay the fosse, now largely filled up but visible continuously along the south-western side. The Roman gateways have vanished, but their position is marked by four roads which converge upon the centre of the fortress where, under the present churchyard, once stood the headquarters building. But the most striking visible relic of the Roman era is the amphitheatre—the largest known in Britain—which has been completely excavated with funds generously supplied by the *Daily Mail* and is now a National Monument. With its eight entrances and well-preserved walls, it is amongst the best preserved Roman structures in Great Britain. For the rest, the racecourse and the fields adjoining the amphitheatre are known to cover Roman foundations including baths and probably a temple of Diana; unscientific excavation long ago revealed and destroyed the main bath-building of the garrison outside the eastern corner of the defences; slight excavations carried out 20 years ago by an enterprising Liverpool committee uncovered part of a building near the centre of the fortress; and chance has disclosed Roman cemeteries, with many inscriptions, on both sides of the river.

“When Gerald the Welshman came this way in the 12th century, time and the builder had not yet dealt so hardly with Roman Caerleon.



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‘Many vestiges,’ he wrote, ‘of its former splendour may yet be seen, immense palaces, once ornamented with gilded roofs, in imitation of Roman magnificence . . . a town of prodigious size, remarkable hot baths, relics of temples and theatres all enclosed with fine walls . . . You will find on all sides, both within and without the circuit of the walls, subterraneous buildings, aqueducts, and underground passages.’ Of these ‘vestiges,’ many must still lie buried, and with them the materials from which the archaeologist may reconstruct something very nearly approaching history—material such as inscriptions, coins, and pottery of known date and origin. Once disturbed without record, these materials lose a great part of their scientific value, and it is the imminent risk of widespread disturbance that has brought the Caerleon Excavation Committee into being.

“The work of excavation will be directed by Mr V. E. Nash-Williams, M.A., Keeper of Archaeology in the National Museum of Wales, and an interim report will be issued annually. Subscriptions should be sent to the Hon. Secretary, Caerleon Excavation Committee, Caerleon, Monmouthshire.”

Our thanks are due to the Caerleon Excavation Committee for lending and permitting the use of the block for the accompanying plan.

## ROMAN BARROWS

We who live in the South of England are so familiar with the prehistoric burial-mounds of the chalk downs that we are apt to regard all round barrows as prehistoric. There, the majority are undoubtedly prehistoric; but even in Wessex some are of later date. Proof of age is not always to be obtained by mere inspection; but it is sometimes possible. Certain facts which have been observed recently suggest that, under certain conditions, it may be possible to distinguish Roman barrows at sight. On the open down within a few yards of Badbury Rings in Dorset are three barrows set in a row beside the Roman road. They are unusually steep-sided and conical in shape, and are surrounded at the base by a small steep bank, outside which is a ditch of the same size. Their appearance is quite unlike that of bell-barrows of the early Bronze Age. The Roman road is perfectly preserved here, apart from the fact that the flint crown has in places been removed. Most of the down has never been under plough in modern times. The Roman road is flanked on either side by parallel banks forty yards apart; now these banks are interrupted by the row of barrows

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in such a way that it is evident (both on the ground and from the air) that the barrows are *later* than the road-banks, and are therefore Roman or later. If, as is probable, the Roman road was made in the first century, the barrows may well be Roman.

Supporting evidence comes from the Mendips. Here, Mr E. K. Tratman found a barrow (lat.  $51^{\circ} 17' 17.5''$  N; long.  $2^{\circ} 40' 40.5''$  W), of precisely similar form lying 200 yards, or less, off the Roman road from Old Sarum to Charterhouse. It forms one of four, placed in a row parallel to the Roman road. It was customary to set tombs thus beside roads, both here and in Italy. In East Anglia there are many instances of Roman barrows thus placed, the best known being the Bartlow Hills. The age of these was proved by excavation to be Roman. Others are the Six Hills at Stevenage, and the Eastlow Hills at Rougham near Bury St. Edmunds, the mounds being in each case placed in a row beside a Roman road.

The subject is dealt with at length by Dr Cyril Fox, now Director of the National Museum of Wales, in *Archaeology of the Cambridge District* (Cambridge, 1923, pp. 191-200).

Roman barrows occur also in isolation. Such is the Mersea Island barrow (lat.  $51^{\circ} 47' 26''$  N; long.  $0^{\circ} 56' 01''$  E) excavated by the Morant Club in 1912. (*Trans. Essex Archaeological Society*, N.S. xiii, 116-39). It contained a glass bowl with cremated bones, placed within a leaden casket in a brick vault. Isolated Roman barrows have been excavated fairly frequently in Buckinghamshire and Hertfordshire, and have generally yielded rich interments. The Radnage glass vessels now in the British Museum (*Antiquaries Journal*, iii, 334-71, plate xxxv) may perhaps have formed part of a barrow-burial, though now all trace of the mound has vanished. Such interments indicate prosperity; they were the graves of people of the upper class—prosperous Britons, and the occupiers of Roman villas. Indeed the two are frequently found close together, and one might even go further and look for a villa in the neighbourhood of the barrows. A case in point is the barrow at Fawler, near Wantage (lat.  $51^{\circ} 35' 29''$ ; long.  $1^{\circ} 31' 32.5''$  W). It is isolated, steep-sided and conical, according to Mr Stuart Piggott, who has visited it. Round the skirt of the mound is a shelf or berm, which may represent a denuded bank; but it is planted with pines and is also covered with thick undergrowth which makes accurate observation very difficult. The locality is an unlikely one for prehistoric barrows, nor have any such been observed near. What is even more interesting is the name of the adjacent

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hamlet—Fawler. This is undoubtedly the OE *fagan flore*—spotted floor—meaning a tessellated mosaic pavement. There is another place of the same name 18 miles away in Oxfordshire; and there, right in the village itself, a mosaic pavement belonging to a Roman villa was found in 1865. (The site is marked on the 6-in. map of Oxfordshire, sheet 26 NW; and the derivation of the name was explained in the Introductory volume of the English Place-name Society, p. 143). It is quite certain that a Roman villa exists somewhere at the Fawler near Wantage, but so far no traces of it have come to light. A small wood near bears the suggestive name of Bath-house Copse, but Mr Piggott reports that not a vestige of pottery or tiles can be found there; The name may of course refer to some modern feature.

Generally speaking, the suggestion may be hazarded that a large number of these *isolated* barrows, occurring in regions which are for the most part barren of prehistoric remains are really of Roman origin. Some, such as the Asthall barrow, excavated by Mr E. Thurlow Leeds, F.S.A. (*Antiquaries Journal*, iv, pp. 113–26) and Scutchamer Knob, the grave of Cwichelme, are of course Anglo-Saxon (F. M. Stenton, *Place-names of Berkshire*, p. 31); and it would have been impossible from their form alone to assign an age. Others, if closely examined, may reveal traces of the characteristic surrounding bank. This is a new line and one worth following up. The Editor would welcome information about the characteristics of barrows placed in rows beside roads which are, or appear to be, Roman; or about any isolated barrows which are found to have the characteristic features described above.

## SIR FLINDERS PETRIE'S EXCAVATIONS IN PALESTINE

For reasons already stated in the press, the work of the British School of Archaeology in Egypt has now been transferred to Palestine. Professor Petrie began his first season's work at Gerar, near Gaza, last winter. The following account, by the Professor, is reprinted from the *Illustrated London News* (2 July), by kind permission of the Editor:

“If you will take down from your shelves a certain unfashionable history called Genesis, much will be found in it about the importance of the old city of Gerar. The patriarchs named there used to seem to be at the beginnings of things, but now far older ages have become familiar to our eyes; the times of Abraham and Isaac come in the midst of well-known ages, and it is well to try to understand their surroundings.



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Gerar was a good place to search for the history of Palestine, for, being a frontier town facing Egypt, it was certain to have many links with what is well known.

"So last December a party of eight from the British School of Archaeology in Egypt left Gaza, and, going nine miles south over perfectly bare, brown, rolling country, with only Bedawin tents in sight, they settled at a mound now known as Tell Jemmeh, the ancient city of Gerar.

"In order to search the place it was needful to clear town after town, one over the other. Each town that we bared had long walls and rooms to be surveyed, and the position and level of everything that was found required to be noted on the drawings of the objects. Thus when the town of the age of the Jewish kings was bared and recorded, it had to be all removed in order to reach the town built by Shishak which lay under it. So altogether six successive towns were cleared, by cutting away about thirty feet of the mound. The period of each of these towns is identified by its contact with known history from 1500 down to 400 B.C. From this each foot of level has its own date and connections established.

"A matter of general interest is the early history of iron. Here the oldest iron knives date as far back as 1350 B.C. ; by 1200 B.C. there were furnaces for iron-smelting, and large tools were being made—a pick of seven pounds weight, large hoes, and plough-irons. Elsewhere two sword-furnaces were found having a cubical fireplace, and a raised bed leading from it more than three feet long, for heating the sword-blades. Excepting one ear-ring, all the gold found in the site was at one level, of about 1200 B.C. The gold frontlet was probably placed on a statue; with it was a gold grounding of a roundel with lotus flowers and buds. Eight gold ear-rings were of this same age. These are of just the time when 'they had golden ear-rings because they were Ishmaelites,' as is said of the people of Midian whom Gideon slew. Evidently this temporary abundance of gold was well known to the writer of the Book of Judges.

"Coming down to the occupation by Shishak—he built a town with well-laid foundations of several courses of bricks laid in sand, which marks the out-level of his work. Here in the floors of the houses we found several little crocks containing the jewellery of the ladies, who had hidden it in this way for safety. One set consists of three necklaces of carnelian and agate, a row of little blue glazed collars with the head of the cat goddess of Egypt—Bastet—which belong to

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this dynasty; an ivory figure of the goddess Hathor—otherwise Ashtoreth; a Babylonian black cylinder with figures; and many small Egyptian amulets. Another hoard had a necklace of rock crystal and carnelian and others of carnelian and agate. A long girdle of cowry shells is a token of some decline in wealth, as it was a cheap ornament. A later hoard had similar necklaces and girdle, with a scarab set in a silver mounting.

“The popular goddess of the Jewish idolater was the Queen of Heaven, Ashtoreth, to whom the women were very devout, as Jeremiah describes. The innumerable pottery figures were the household centres of her worship. When Egypt ruled, as under Shishak, the hair is arranged as an Egyptian wig, like the middle head on the left; when Syria was in power the hair ends in a coil on each side, as the middle figure in the lower row. A usual way of making such figures was to turn an upright pot on the wheel, attach feet below, and stick in a moulded head on the top, the peg end of which is plain in the centre head of the top row here. As the models became worn in repeated moulding, the detail of the hair was recut in clumsy fashion. Certainly art did not help devotion in the worshipper.

“The influences of the further East are mainly seen at the time of Shishak, whose name Sheshenqu shows that he came from Susa in Persia. The rough pottery models of chariots which had wheels are also found in Assyria, and various forms of arrowheads were derived from Central Asia. A trachyte lamp-bowl with a bull’s head came from the north. Later Assyrian rule under Esarhaddon produced a large cylinder of lapis lazuli with two sacred figures which are well known in Babylonian mythology; these are the bird-scorpion with the head of a god, and the dugong figure of the god Ea, who civilized mankind. Many little incense altars of Assyrian form were found, of the same age. A rubbish-pit of this time contained a great quantity of broken table-service of pottery; the forms and material are quite unknown hitherto in Palestine. The graceful bowls and the very thin egg-shell fabric mark this for Assyrian, and it seems to be the waste from the house of the governor, who imported his crockery from home.

“Meanwhile, there had been European influences between the two Oriental periods. About the ninth century B.C. the safety-pin, or fibula, was brought into Palestine, where it was made in a form unknown elsewhere, with the butt of the pin inserted in a socket of the bow. The last stage was to do away with the spring of the pin, and swivel the



THE MOUND OF GERAR

*facing p. 350*





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pin sideways on a rivet joint. Many pieces of coloured glass-work from Cumæ, and a profusion of Cypriote pottery, also mark the age of Mediterranean influence.

"A block of sandstone helps us with the history of the week; it has rows of fourteen strokes, which belong to a seven-day week, and not to a lunation. Another block has on it the frame of concentric squares, for a game familiar in the West. A smaller block has the old Egyptian game-board of 3 by 10 squares.

"Lastly, in the Roman age, a new site was adopted, near the old mound. A rubbish-hole there contained much broken glass, and one perfect glass flask which seems to be unique. From the shoulder to the base there stretch fourteen threads of glass inside.

Much has been illustrated by this search of Gerar; the position of the Philistine as corn-factor for Crete; the affair of Isaac and Rebekah there; the abundance of Midianite gold; the beginning of iron-working; the Assyrian connections; the Egyptian resistance to the Scythians; and the importance of the city as a manufacturing and trading centre, as well as a strategic base."

The objects found were on exhibition during July at University College, Gower Street. Amongst the most interesting were some sickle-flints with polished, serrated edges; several of them still retained the white limey plaster which was used to set them in wooden handles, for reaping (compare p. 266 of this number). We wish the School and its Director every success in their next season's campaign which, we learn from *Ancient Egypt*, will be conducted "on another tell in the south of Palestine, which promises to carry back the Egyptian connexion before the XVIIIth dynasty."

The view of the mound of Gerar, reproduced by kind permission of Sir Flinders Petrie, gives some idea of its size. The original, natural, surface is indicated by a broad belt of dark soil, visible on the right hand side of the photograph, about half-way down the cliff. The whole of the crescentic central part of the mound has been hollowed out by torrents since the formation of the artificial layers.

## ROCK-SHELTER OF LA GENIÈRE

This rock-shelter is situated on the left-side of the valley of the Ain, about midway between Geneva and Lyons. Its excavation yielded amongst other less remarkable objects, a slab of rough limestone with the engraving of a bison, another of a reindeer, and the skeleton of a

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child of 7 or 8 years of age. These finds are regarded as belonging to the end of the late palaeolithic period ("un faciès purement local de la fin du Magdalénien"). Perhaps the most remarkable feature is the resemblance, even down to the minutest details, of the bison to the painting of a bison in the cave of Font-de-Gaume, near Les Eyzies, in the Dordogne. We agree with the Abbé Breuil that it is difficult not to suppose both to have been the work of the same artist. Alternatively the engraving might be a "souvenir de pèlerinage." The Genièvre discovery confirms the late Magdalenian age of the Font-de-Gaume paintings, which had already been suggested on quite other grounds by the Abbé.

Of the skeleton, only the skull could be removed, and this was itself in a bad state of preservation. The lower jaw, however, was perfect. The skeleton clearly belongs to *Homo sapiens fossilis*, but has no resemblance to that of the modern French child. Though dolichocephalic, the skull does not belong to the type of Cro-Magnon, Chancelade or Neanderthal. Certain characteristics relate it to the race of Grimaldi, and the excavators conclude that the Genièvre child was a Magdalenian descendant of the Grimaldi stock which lived in the south of France during the Aurignacian period. Certain "negroid" features are compared with others observed in early neolithic skulls in Brittany (G. Hervé in *Bull. Soc. Anthr. Paris*, ser. 5, iv (1903), 432). Certain other features, particularly the teeth, recall the modern Australian native.

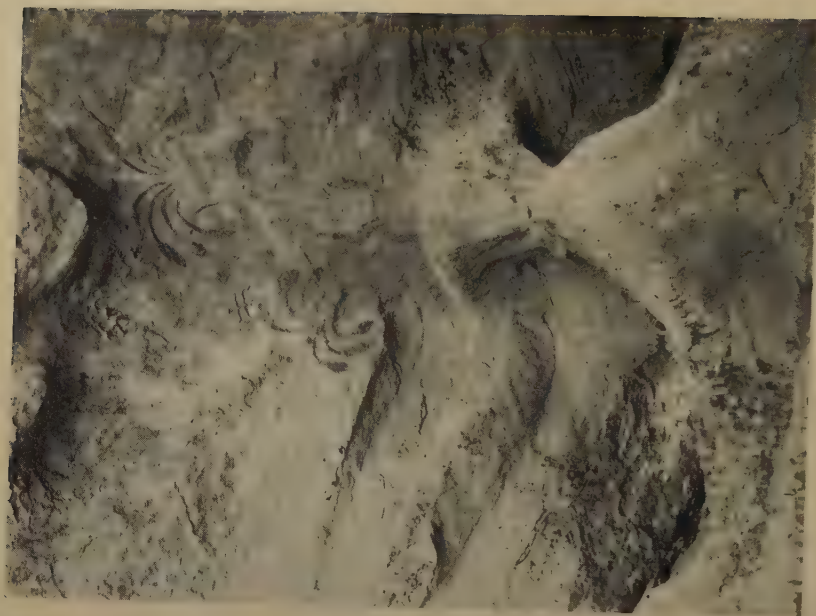
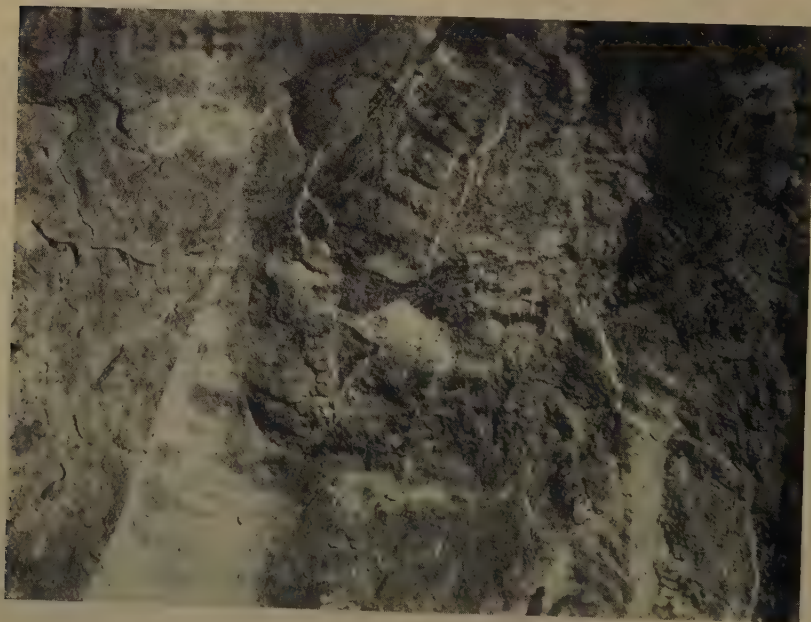
The flint implements are very interesting. Though clearly Magdalenian as a whole, they include a large number of pygmies. Now these are generally supposed to have been used for fishing, either as fish-hooks or harpoon-barbs,\* and this supposition is strengthened by the rarity of animal bones in the rock-shelter. "These little implements," write the authors, "whether arrow-heads or fish-hooks, were used at the end of the palaeolithic period or the beginning of the neolithic, throughout every region of North Africa, from Egypt to Cape Blanco and from northern Tunisia to Lake Chad. Their presence in the rock-shelter of Genièvre is in our opinion proof of African, or Capsian influence." May we not associate the wide distribution of these pygmies (found also in India, Australia and South Africa) with the "negroid" or

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\* Similar flints are still used for fishing by the primitive peoples of Western Africa; see M. Laforgue, Quelques engins de pêche du néolithique inférieur du Sahara, *Bull. de la Soc. de Geogr. et d'Arch. de la prov. d'Oran*, xlv, 227, (figs. 5 and 7).







ROCK PAINTINGS—IN EZZAN, CENTRAL SAHARA

*Ph. M. Mouchamp*

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“ Australoid ” features of the skull of Genière, and perhaps therefore with one of the first great movements of dispersion of the human race ?

### MOROCCO

In the current number of *L'Anthropologie* is a paper by M. Paul Pallary on some prehistoric sites he has discovered in Morocco. For the most part these consist of flint-sites, which are extremely abundant and prolific. They are especially abundant in the valley of the Moulouia where the flints can be seen even from the train. In the Midelt district were found Levallois flakes and Mousterian points. Elsewhere tumuli and what seem to be the ruins of prehistoric stone-built villages were observed. In one place, near the Col de Tagnagneit, are two concentric circles of stones, the inner being 20 metres and the outer at least 100 metres in diameter.

It would be interesting to know whether rock-cut tombs of the Balearic type occur in North Africa. In Majorca these are found exclusively in a soft Pleistocene limestone which is easily worked and generally occurs near the coast. Similar tombs are found in Provence, in Sicily and in Eastern Mediterranean lands. In Majorca they are dated to the early Bronze Age by the discovery in them of bronze knives.

### SAHARAN ROCK-PAINTINGS

During the Ice Age the Sahara must have been fertile and habitable. The conditions which produced an ice sheet over northern Europe must have caused rain to fall frequently over what is now the desert. That it continued habitable in later times is proved by the discovery of flint implements throughout it. But the existence of rock-paintings at a spot which is now almost entirely inaccessible, and which lies right in the heart of the desert, is of even greater importance. In Ezzan lies a few miles north of the Tropic of Cancer and east of longitude 10. The region today contains no animal life at all, and only one tree. It is in the least known portion of the Sahara, lying about half-way between Lake Chad and the Gulf of Tunis. The cave itself has been formed by water, and has been exposed to view by a fall of cliff. The floor is of rock, but there is a talus in front which, the discoverers inform us, might be excavated with good prospects of success. Close by is a spring of fresh water.

A full account of the site is published in the current number of *L'Anthropologie*, (xxxvi, 409-27), by Dr P. Durand and M.L. Lavanden.



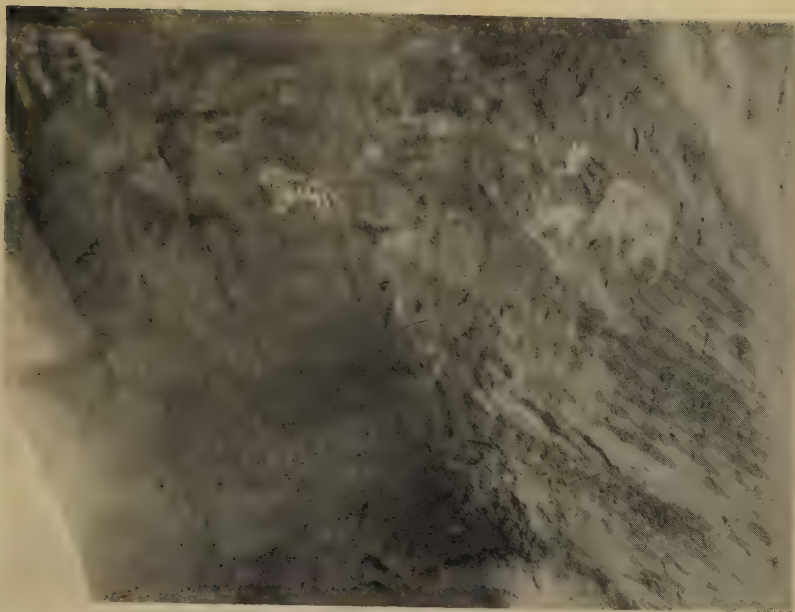
## ANTIQUITY

The paintings are described, from photographs, by the Abbé Breuil. Six photographs and one drawing are reproduced. We must refer our readers to Monsieur Breuil's detailed description to which we cannot do justice in a brief summary. There is evidence, from overlapping, of more than one period, but a skirted bowman with a heart-shaped head recalls the women, if such they be, of Cogul in eastern Spain, with which Monsieur Breuil compares it. There are several human figures of the double triangle type, with necks but no heads. One skirted figure is shown as running, with clumsy gait. One man is tailed and others are ithyphallic. The resemblance to the eastern Spanish designs are regarded by Monsieur Breuil as certain evidence of some connexion with that art. "*Je ne crois pas qu'on puisse penser à une simple convergence fortuite.*"

Many animals are portrayed. Certain mastiffs, with their tails well up, resemble those on prehistoric,—that is, predynastic,—Egyptian plaques and knife-handles. They are also similar to those on Assyrian monuments, and an Asiatic origin is generally presumed. Some vegetable forms resemble those on early dynastic Egyptian vases. There are Oryx, bulls (probably wild) and horned sheep exactly similar to those of predynastic Egypt.

The relationships indicated are precisely such as might be expected in a region almost equidistant from Spain and the Nile Valley. Monsieur Breuil even hints at Bushman resemblances, and a hint from this quarter may mean much. Evidence of the date of the In Ezzan paintings is at present only indirect, and more than one period is certainly represented. So far as it goes the evidence suggests that some of the paintings are early neolithic; but in so remote a region the term 'neolithic' has little real meaning. It may however be remarked that there is other evidence of a cultural connexion between Egypt and Spain in the swallow-tailed arrowheads of the Fayum, which are found in Spain during the eneolithic period there (see fig. B, p. 332). A common origin in the central Sahara is by no means improbable; it is at any rate a good working hypothesis. When we remember the much earlier 'negroid' skeletons of Grimaldi, the Capsian (African) penetration of Spain, and the northern origin of the Bushmen; when we know that rock-paintings occur throughout Africa, in Ouenat and the Sudan, and that the northernmost Bushman paintings are found near lake Tanganyika, it will be seen that order is beginning to appear in the chaos of racial movements in this quarter of the world.

Finally, a word to our readers, whom we like to regard as potential



ROCK PAINTINGS—IN EZZAN, CENTRAL SAHARA

*Ph. M. Mouchamp*

*facing p. 354*





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collaborators—and particularly to those in the Sudan. There must be in Darfur rock-paintings which await discovery. Such rock-paintings would provide a most valuable missing link in the chain uniting North and South Africa. Can anyone send us, for publication, photographs and descriptions of such?

We wish to express our sincere thanks to Monsieur Breuil for the loan of these photographs, from which plates were made. We wish also to thank the Editors of *L'Anthropologie*, of whom Monsieur Breuil is one, for permission to reproduce them again.

### ABYSSINIAN MEGALITHS

Abyssinia remains almost unexplored even to this day. It is regarded by modern Europeans much in the same way as ancient Britain was regarded by the Romans in the days of Julius Caesar. Unfortunately for us, however, neither missionaries nor archaeologists existed in the Roman Empire; but future generations of Abyssinians will, we hope, be grateful for the pioneer work of Father Azais. Since 1922 he has been exploring the ancient remains of Abyssinia, and has discovered both dolmens and dolmen-idols ("statues-menhirs"). Near Saden there were more than a hundred and fifty tombs round the dolmen-idols, and this fact, and the discovery of a burial at the foot of a dolmen-idol, proves their funerary associations. In one instance a round tumulus 30 yards in diameter was surrounded by many dolmen-idols and other stones. A hint that the caves of southern Abyssinia may contain "many interesting things" suggests that there is more to come. We join, however, with Dr Verneau, one of the learned editors of *L'Anthropologie*, in expressing the hope that specialists, that is to say trained and experienced excavators, may be attached to any future expeditions. As Dr Verneau says, methodical excavations, carried out patiently and not rushed through in haste, are essential if light is to be thrown upon the ancient inhabitants of Ethiopia. But why cannot pioneers be content with the record of observations and the construction of plans? Such preliminary field-work is of far more value than sporadic digging by amateurs, and it does no harm, even if badly carried out. We would willingly exchange all Father Azais's reports for one or two carefully constructed plans of the dolmens and tumuli he has discovered. (*L'Anthropologie*, xxxvii, 223-6).

As an example of how to carry out such a voyage of exploration into archaeologically unexplored country, we would cite Mr Duncan

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Mackenzie's trip to Sardinia, made in company with Dr Ashby and the late Mr E. T. Newton, who did the plans. Mr Mackenzie's two papers (published in *Papers of the British School at Rome*, vols. v-vi) are still the standard work on the megalithic remains of Sardinia, though he did no digging whatever.

A very interesting and well illustrated account of these discoveries is published in *Art and Archaeology* for July-August (vol. xxiv). It is written by Father Romain Butin, Acting Director of the American School of Oriental Research in Jerusalem.

### FRENCH EXPLORATION IN ASSYRIA

An expedition consisting of Father Poidebard, of Beirut University, and M. Maurice Dunand, of the Syrian Department of Archaeology, returned recently from a three months' reconnaissance in the country north-east of the Euphrates. The object of the journey was to verify on the ground the observations made by Father Poidebard in 1925 from an aeroplane. These related to the ancient road-system of the Upper Jazira. River-crossings, remains of Roman road-causeways, and tracks linking 'tells,' first discovered from the air, were to be authenticated, and further air-photographs obtained. In addition, the 'tells' of the region bounded by the Upper Khabur, the railway and the Irak frontier were to be examined; and trial-excavations made in Assyrian sites likely to repay future excavation.

With the co-operation of the Army of the Levant, excellent results were obtained. A fine series of air-photographs was obtained, and photographs were also taken on the ground. A large collection of Assyrian pottery was brought back, enabling the principal 'tells' and ancient roads of the region to be dated. A deep cutting was made in Tell Hamidi (40 miles north of Hassecheh), and prehistoric levels were reached. The remains of the citadel were found, and in the cemetery an intact grave was excavated.

A good deal of attention was given to Roman remains. Five new camps were discovered by aeroplane observation—three to the south of Nisibin, along the Jaghjagh, and two between Hassecheh and Sinjar, on the frontier of Severus, in Syrian territory. Three of the camps, invisible [as such?] on the ground, were spotted by means of their shadows when seen from the air, and were photographed. It is anticipated that air-photography will reveal much of the little-known Roman frontier between Palmyra and the Tigris. (*La Géographie*, p. 295).

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### RECENT WORK IN GREEK LANDS

The excavations carried out by the French School of Classical Studies during the past year have revealed a good deal of interesting material. The work at Mallia in Crete, directed by M. Joly and assisted by M. Flacelières, succeeded in determining the extent of the palace which ran much further to the north than the excavators had expected. The region to the south of the central court was cleared and was found to consist of a long narrow suite of communicating rooms. The ordinary household pottery so abundant in the rest of the palace was very rare here, and in contrast painted sherds were numerous. They are of the L.M. I period (c. 1580-1450 B.C.), and the most frequent design is that of the spiral with a central dot. On the west side of the central court is a terrace which was obviously a sanctuary. In it were found a fine table for offerings and a sort of bench for holding cult-objects. To the north was found a large interior court with a length of 19 metres, and north of this again five store rooms which seem to mark the limit of the palace in this direction.

The excavation of the temple attributed to Zeus Thaulios at Pherae was continued last year. The most important discovery was that of a *favissa* about 11.50 metres south of the temple, containing ex-votos of bronze, belonging to the Archaic Period. A statuette of a warrior and cauldron handle in the form of a griffin's head were the most noteworthy of these objects. Numerous terracotta ex-votos representing female figures and practically all of the Archaic Period, were also found. From this, it would seem that the sanctuary must have belonged to a female deity and, in fact, since the inscriptions, on which M. Arvanitopoulos bases his attribution of the temple to Zeus Thaulios, were found quite far away, it may turn out that he was mistaken.

The German School also had a successful year's work. The excavations at Tiryns, interrupted by the war, were resumed last September. In the midst of the Mycenaean ruins on the citadel was found the sacrificial pit of a sanctuary with late Geometric and early Archaic objects, so that it would seem that the sanctuary of Hera must have been on the citadel. Part of the lower town, south of the citadel, was uncovered and the greatest epoch of construction here, as well as on the citadel, was the late Mycenaean. Several periods can be distinguished, and the town seems to have been built on a uniform system with parallel walls.



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At Samos, the most important result of this year's campaign by the German School under Herr Buschor, was the discovery of a prehistoric settlement immediately north of the great temple. In 1925, sherds of this period had already been found in the area between the façade of the temple and a point 150 metres eastward. The newly discovered settlement extends for a length of about 100 metres to the west of this area, but further excavation will be needed to show if this town had the great extent which may be concluded from the present finds. The oldest stratum shows houses of the so-called megaron type, arranged, for the most part, in complexes. The objects found here would seem to belong to the end of the early Cycladic Period, while various remains of other buildings in bad condition appear to date from the middle Cycladic Period. The thick circuit wall which was cut into by the north-west corner of the paved court, mentioned in the report last year as being under the foundations of the temple, belongs perhaps to the Mycenaean Period. Some rooms were built against this circuit wall while various houses with several rooms each, might be contemporary with it. Close to the north wall of the paved court was found a badly destroyed tomb mound which must originally have had a diameter of about 6 metres. Its construction in this spot probably presupposes the previous destruction of the town. The tomb-chamber contained remains of two burials and the funeral offerings consisted of late Mycenaean stirrup-vases, a three-handled pyxis, the serpentine pommel of a dagger, an ornament shaped like a rosette, and a silver bead. From the chamber a short dromos, closed by a wall, led out to a quadrangular niche. A great mass of sherds which yielded many whole pots was found in this prehistoric layer.

In the course of the exploratory campaign of 1924, the American School discovered the ruins of a prehistoric settlement on the hill called Tsoungiza, which rises above the west end of the village of Heraklion. The whole top of this mound was carefully investigated this year and a fairly extensive excavation was undertaken on a lower terrace on the north side of the hill. In both places, abundant remains of prehistoric settlement were brought to light; dwellings, graves, pottery and miscellaneous objects were found. On the summit of the hill, the foundations of several small houses of early Helladic date (3400-2100 B.C.), were laid bare. One of them, with fairly well-preserved plan, apparently consisting of a single room, contained 8 pithoi, standing on the floor, and 9 saddle querns or millstones. In an adjacent house 12 pithoi were found, one unusually large one being

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sunk deep in the floor. On the terrace the deposit lay in strata, representing the three stages of the Bronze Age. The deepest layers, from which only pottery was obtained, belong to the early Helladic Period. In the middle stratum the ruins of a house were encountered, together with characteristic potsherds of the middle Helladic Period (2100-1600 B.C.) In the upper levels, not far below the surface of the ground, were uncovered the stone foundations of several houses, mainly of the second late Helladic Period.

The complete excavation of the cave on the south side of the Tsoungiza Hill was carried out during November and December 1926. The cave was found to extend some 15 m. westward from the pit dug in the preceding year, widening to a breadth of about 6 m. and then gradually narrowing to 2.9 m. though its sides are by no means regular. The whole cavity was packed with earth, pieces of fallen *poros* and quantities of stone. Throughout this deposit neolithic potsherds were extremely abundant. Other finds were a dozen complete obsidian blades, a toothed implement of flint, a bevelled celt of black stone, a serpentine bead, terracotta buttons and beads, fragments of worked bone, and a button-shaped seal of whitish stone, bearing on one side a checker-board pattern marked with deeply incised lines, and on the other a character like a  $\Delta$ , dotted at its centre. Animal bones were numerous, chiefly from small animals such as sheep and swine, but one huge joint must have belonged to a creature as large as a good-sized ox. Undoubtedly the most important relic, however, was a fragment of a thick skull, which, together with some other remnants of human bones, was found lying on hardpan at the deepest point of the cave. The fragment of a cranium, which preserves part of the longitudinal and occipital sutures, is, so far as is known, the earliest definite skeletal remains of man yet recovered in the Peloponnesos. (*American Journal of Archaeology*, xxxi, 218-25).

## Recent Events

*The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.*

The sarcophagus of Queen Hetepheres at Giza (described in the last number of *ANTIQUITY*) has been found not to contain the queen's mummy. It is suggested that this was destroyed by the robbers who violated the original tomb at Dahshur ; but that the truth was concealed from Cheops by the priests who dreaded his wrath. Otherwise it is hard to account for the trouble taken to conceal an empty sarcophagus. The concealed cavity contained an alabaster box divided into four compartments. It is stated that two of the compartments still contain a 'clear yellowish fluid' (*The Times*, 27 May); this has now been proved by analysis to consist of carbonate of soda dissolved in water ! An authoritative account of the operations, by Dr Reisner, has been published as a special supplement to vol. xxv of the *Bulletin of the Museum of Fine Arts* (Boston). It contains 36 pages, and 23 photographic illustrations and costs 30 cents.



A small deposit of gold jewels has been found in the corner of a rock-cut tomb in Crete. The discovery was made by Mr E. J. Forsdyke of the British Museum, and communicated in a letter to *The Times* (8 June) by Sir Arthur Evans. Amongst the jewels was a gold signet ring 'engraved with an inscription in the earlier class of the advanced Minoan linear script.' This 'unique discovery' says Sir Arthur, 'opens out a new chapter in the history of Minoan writing.' The deposit dates from the 17th century B.C.



Mr D. Jenness, of the Victoria Memorial Museum, has been exploring the province of Wales, the westernmost portion of Alaska, facing Asia. He has found ruins belonging to four periods, all earlier



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than the discovery of Alaska by Europeans. Those of the second period agree exactly with the oldest ruins of Arctic Canada. There is no means of dating these discoveries but the oldest are conjectured to be at least 1000 or 1500 years old. (*L'Anthropologie*, xxxvii, 231-2).



The reported discovery of carved chalk figurines at Spiennes in Belgium has proved false. The objects in question were made by an impudent forger called Lequeux. He was detected playing the same game in Morocco whither he seems to have fled when Belgium became too hot for him. He has recently been arrested for attempted tomb-robbing in a cemetery near Paris. (*L'Anthropologie*, xxxvii, 232).



A neolithic flint-site exists on Cape Blanc-Nez, 7 miles south-west of Calais. It belongs to the period of Tardenois, and yields pygmy implements. The summit of the hill has a cap of Tertiary sand, and is yet another instance of the preference of those early neolithic peoples for sandy soil. A kitchen-midden site has long been known to exist at Wissant close by, and implements of the older palaeolithic period are found near the 'fossil quaternary cliff' of Sangatte. (*L'Anthropologie*, xxxvii, 226-7).



Mousterian remains have been found by M. Doumergue in the cave of Abd-el-Kader, province of Oran, Morocco. They are described in the Bulletin of the Society of Geography and Archaeology of Oran, vol. xlvi.



At a recent meeting of the Institut Français *L'Anthropologie*, M. Vaufrej gave an account of some recent research in the lands bordering on the western Mediterranean. It is now established that remains of both mammoth and woolly rhinoceros have been found in the cave of Cardamone, near Lecce, in Otranto, S. Italy. They belong to the upper palaeolithic period, and indicate that the climate of southern Italy was then a cold one. Other evidence shows that at the same time the Atlas region of North Africa had a severe climate. M. Vaufrej described the meteorological conditions which would produce

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these results, and concluded with the suggestive remark that 'during the whole of the last glaciation the population of the Atlas region was but scanty, whereas the northern Sahara was thickly populated.'



It is reported that the Dutch excavations at Argos, interrupted by the war, are to be resumed shortly ; but we have no official confirmation of the report.



Stone Age burials have been found in the Altai by a Russian expedition led by Professor S. J. Rudenko. The bones were painted with ochre. Remains of the Bronze Age were also found. (*Nature*, 5 March).



The American expedition which is to excavate in Athens itself has raised the necessary 500,000 dollars ; it is stated by Dr Capps, Professor of Greek at Princeton University, that the American School of Archaeology in Athens will provide a further sum of 500,000 dollars to cover the cost of the work during the next two years.



The excavation of Pergamum in Asia Minor has been resumed by the Prussian State Museums, under the direction of Dr Theodore Wiegand. An arsenal was found, containing several hundred stone balls. The School of Medicine, where Galen taught, is to be excavated later on. (*Morning Post*, 24 June).



In 1918 the French Government obtained from the Ameer of Afghanistan a monopoly of the archaeological rights of that country for thirty years. In 1922 M. Foucher set out to explore its possibilities. He returned in 1925, and has just reported the results to the Academy. Little of interest seems to have been discovered and M. Foucher has small hope of finding "the great monuments" which one would have expected as the outcome of Bactrian civilization. (*Le Temps*, 15 May ; *The Times*, 18 May).

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The German excavations at Babylon, begun in 1899, were stopped in 1917. The objects found, packed in 500 cases, were fortunately preserved intact, and through the good offices of the late Miss Gertrude Bell, were recently sent to Berlin by the Iraq Government. They are now being examined there, and a preliminary statement by Professor Unger appears in *Forschungen und Fortschritte*. It is mainly concerned with the 900 graves which were opened and which are said to range from 2000 to 300 B.C. (*The Times*, 8 June).



Excavations have been carried out at Boubousta on the Haliacmon, in the foothills of the Pindos range. They have been directed by Mr Heurtley, Assistant-Director of the British School in Athens, and have revealed a settlement which dates from the period called late Helladic III (about 1400 B.C.), but which lasted into the Geometric period about 800 B.C.). 'Evidence thus seems to be forthcoming of the existence of a flourishing geometric painted style in the region from which the originators of the Greek geometric style are thought to have entered Greece.' (*Morning Post*, 29 June).



Referring to a note on the Huelva hoard (ANTIQUITY, I, 106) Mr Rickard writes to say that the find is said locally to have been made 'in the wreckage of an old vessel buried in the silt of the harbour.' He adds the interesting information that 'some of the copper ore in the district, at Palazuelos, contains tin, and might by concentration during smelting and refining, yield a bronze.'



## Forthcoming Excavations

### THE ROMAN WALL

We quote the following from the *Durham University Journal* for June 1927 :—

“ Mr F. G. Simpson hopes to recommence excavation on the line of Hadrian's Wall on 1 September.

“ Readers of Mr R. G. Collingwood's review of recent research on the Walls of Hadrian and Antoninus in the first issue of *Antiquity* (March 1927), will realize how the results of the Excavation Committee's work at AESICA in 1925 appear to have threatened the foundations of the “working hypothesis” put forward in 1922. The Committee is fully alive to the importance of continuing the work in the AESICA sector, and is already considering ways and means for its resumption. Nevertheless, it has decided that this summer it will be of more general service to conduct excavations at the Fort of AMBOGLANNA at Birdoswald, one and a half miles west of Gilsland. Permission to excavate has already been given by the landowner, Mr Irwin A. Wright, and the Haverfield Bequest Committee has made a grant of £50 towards the expenses.

“ It is generally considered that Birdoswald, when compared with the remaining fort-sites on the line of the Wall, offers possibilities which are second to none ; while in relation to the two Walls, one of turf and the other of stone, its position is unique.

“ This summer's work, therefore, should serve a double purpose. It should provide that varied experience for the research student which will ensure the successful development of Romano-British studies in this University. It should also advance our knowledge of the earliest Roman occupation of the site and help to resolve the complex of structures which at present baffles us.

“ In the Committee's programme there is also another item. At High House, within a mile west of Birdoswald, are the best-preserved remains of the Turf Wall. Thirty-two years have passed since the Cumberland Excavation Committee, under Haverfield's leadership, made the discovery which revolutionized the study of

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Hadrian's Wall. Of the members of that Committee, one only, Mrs Hesketh Hodgson, remains with us. To the present generation of students, a re-examination of the Turf Wall at the present juncture will be particularly instructive."

### THE MOUND AT HARLOW, ESSEX

It is proposed to excavate this mound and an appeal for subscriptions has been issued, signed by Messrs. Miller Christy, F. W. Reader and R. E. M. Wheeler. The site seems most promising, and the names of those concerned is a sufficient guarantee that the excavations will be properly carried out. Mr Hazzledine Warren is acting as hon. treasurer. We quote the following notes (by Mr Miller Christy) from the leaflet circulated :—

"The Mound at Harlow is of a kind which must have been occupied by man from the very earliest times.

"It is a large low natural hillock of London Clay, about ten acres in extent and twenty-five feet high. It stands close to the railway-station in the broad flat-bottomed marshy valley of the river Stort and about two hundred yards from the river, which has evidently run on all sides of it at different geological periods. The mound rises from the level river-alluvium, which completely surrounds and isolates it ; and the blackness of this alluvium shows that it occupies the site of a former morass or swamp, which must often have been flooded in winter ; hence the easy defensibility of the mound in early times.

"The base of the mound is surrounded, just above the level of the alluvium, by traces of a ditch and bank. At its northern end, the mound is prolonged into a sort of platform, in which is a depression, above the level of the marsh, apparently once a pond for holding sweet water. The summit has, doubtless, also once been encircled by an entrenchment, but of this no trace is now visible ; for London Clay, when on a slope, is liable, after heavy rain, to ripple down hill, like treacle, so that any earthwork quickly disappears, though traces may often be found by digging.

"Near its southern end, the mound is crossed by a low embankment carrying the main Cambridge line of the L. and N.E. Railway. Here, too, it was approached formerly (according to the late Mr I. Chalkley Gould, F.S.A.) by a sunken trackway leading from the higher eastern escarpment of the river-valley, of which digging will probably reveal traces. This track was probably paved ; and from this,

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apparently, the mound got its fourteenth-century-name of Stanegrove-helle (meaning Stone-ditch Hill), now corrupted into Standing Groves.

"The mound must have been occupied at least as early as the Bronze Age ; for, on a recent visit, I picked up, close to it, a fragment of an urn of that period. I saw also burned earth, like that of which the ' Red-hills ' on the Essex coast are constructed, and fragments of pottery, like that met with in the ' Red-hills.'

"Coins of Cunobeline and Tasciovanus are recorded to have been found, either actually on or close to the mound.

"Evidences of occupation in Roman times abound in the immediate vicinity. The important road scarcely 300 yards to the east is almost certainly Roman. In 1819, workmen, digging into the mound are recorded to have ' discovered some very strong walls, which they were not able to penetrate.' Potsherds, fragments of Roman bricks, and *tesserae* are to be seen lying about on the surface. There have also been found, in or close to it, a small bronze head of Silenus, a large bronze fibula, and fragments of a cock and triton. A few months ago, I cleared out a Roman domestic rubbish-pit, exposed in the side of a sand-pit beside the road, obtaining several Roman pots and a quantity of fragments, all of the first century and all now in the museum at Colchester.

"In Saxon days, the mound was that on which the hundred-moot of the hundred of Harlow met ; and it is, doubtless, the ' hoo,' in the occupation of one Alfgar, mentioned in the will, dated 1045, of Thurstan, son of Wine."

As we go to press we have received a printed postcard from Mr Miller Christy which says :

"Digging, which began on the 3rd of August has already produced very satisfactory results.

"The foundations of an important house, apparently Roman, have been uncovered, together with abundant fragments of Roman brick and pottery ; also many loose *tesserae* of earthenware."

## ELBA

A prehistoric cemetery has been found on the island of Elba, near Porto Ferraio. Excavations are in progress. (*Art and Archaeology*, xxiv, 47).



## Reviews

### THE SOCIAL AND ECONOMIC HISTORY OF THE ROMAN EMPIRE.

By M. ROSTOVTSSEFF. Oxford University Press. 1926. pp. xxvi, 695, 60 plates. 45s.

Professor Rostovtseff has written a great book ; not only one large in sheer physical bulk, or splendid in its appearance and its wealth of magnificent illustration, or massive in the amount of learning gathered into its pages and detailed in its admirable notes, but a great book in the proper sense of the word—great by its mastery over its materials and by the way in which an enormously complicated mass of information is subordinated to the development of a theme striking in its simplicity and dramatic in its presentation. Like all great historical books, this is one which can be read like a novel, and, when so read, grips the imagination with such force that the reader cannot lay it down.

The main subject is the process by which " a refined, delicate, highly aristocratic civilization," the civilization of the late Republic and the first phase of the Empire, " was gradually absorbed by the middle class and adapted to their standards and requirements," till, on the virtual extinction of the old aristocracy, the new middle class created a culture of its own, comparatively simple, elementary and materialistic in character ; then sets in a second movement, the collapse of this " bourgeois " civilization under the onslaught of a proletarian movement in the third century, till, by the time of Diocletian, the class-war has destroyed " the foundations of the economic, social, and intellectual life of the ancient world," and built up a new proletarian state " based on general ignorance, on compulsion and violence, on slavery and servility, on bribery and dishonesty." The aristocratic society of the Julio-Claudians was destroyed by the Emperors, notably Nero and the Flavians, in their remorseless persecution of the Senate and all it implied ; the bourgeois society of the Antonines, by the military anarchy of the late third century, in which the army, now recruited from the peasantry, and serving as a medium of expression to that hitherto inarticulate class, turned against the middle-class life of the towns and smashed it in an orgie of class-hatred.

In matters of detail, there is much here that is disputable ; but there is no doubt whatever that the outline of events was as the author describes it. Everyone accustomed to studying the chronology of the Roman Empire by reference to archaeological material is familiar with the distinction between the early " aristocratic," the central " bourgeois," and the late " proletarian " phases of culture ; and knows that the third phase has a peculiarly close connexion with the peasantry—a rural, not an urban, proletariat—which is found in the fourth century imposing its standards upon the general life of the time. More or less clearly, all archaeologists have arrived at some such doctrine ; and, so far, Professor Rostovtseff's main thesis states

What oft was felt, but ne'er so well express'd.

The reason why he has expressed it so well is that he feels it as a living reality. To a Russian, driven from his country by social revolution, the idea of a proletarian attack

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on civilized society, a class-war in which there are no victors and whose only result is to create a servile state "much simpler, much more primitive, infinitely more brutal" than the bourgeois capitalism that preceded it, is no mere historical legend; it is a vivid and frightful fact. And it is in the furnace of that fact that the author has fused his materials into a solid ingot of metal. As Grote's radicalism created his splendid picture of Athenian democracy, as Mommsen's Prussian idea of the State inspired his colossal statue of Julius Caesar, so, once more, political realities have in retrospect created political history. Dry-as-dust historians, who believe that all modern interests and party passions should be forgotten by the suppliant on entering the temple of Clio, may deplore it; but they cannot alter it; unless the past is seen in the light of the present, it cannot be seen at all. It can only be fumbled with.

Yet the dangers are obvious. To read one's own political passions into the politics of the past is certainly the only way of bringing the past to life; but one may endow it with a life too like that of the present. And this is a danger which Professor Rostovtseff has not, perhaps, wholly escaped. That the army, in the third century, did in fact destroy the "bourgeois" civilization of the towns and prepare the way for a new type of culture based on the villages, is true. But the author holds that the army not only did this, but meant to do it; that the peasantry had by this time, as a class, passed from a dull submissiveness to "a sharp feeling of envy and hatred towards the privileged classes," and that the army, acting as the weapon of these feelings, set itself up as the class-conscious protagonist in an explicit and organized class-war. He grants that the thesis is not easy to prove; and it cannot be said that his evidence for it is convincing. Indeed, he finds himself, on at least one crucial occasion, in conflict with his own sources, which ascribe to a pressing need for money certain measures quoted by him as due to class-hatred. The Emperors, acting as nominees of the army, certainly plundered the town-dwellers ruthlessly; but the evidence that class-consciousness, and not *auri sacra fames*, was at the bottom of it, seems inadequate. Class-consciousness, even in the modern world, is difficult to excite and difficult to maintain at fever-heat; impossible, it seems, without the accompaniment and stimulant of a flood of rhetoric. Today, this rhetoric stands as documentary evidence for the existence of the feeling; but the mere fact that Professor Rostovtseff has to infer the feeling in the main from the acts of the third-century army, shows that there was no literature of class-consciousness; and we would suggest that class-consciousness is largely a literary phenomenon, and that where its literature is not, it is not.

A similar danger attends the implication of the author's general terminology. Bourgeois, capitalist, proletariat, and other constantly recurring terms, are terms invented to describe highly-specialized features of modern economic life. They do not stand for eternal truths; they are "historical categories," and not one of them applies with absolute accuracy to the more or less corresponding facts of the Roman Empire. The result of their employment, used as they are without explicit warning, is to create in the reader's mind the illusion that the economic structure of the Roman world was composed of the same factors as that of our own, and that the relations between them were the same. Modern Europe and ancient Rome are identified, and the Empire of the third century passes imperceptibly into Bolshevik Russia. That is not wholly a fault; for there is a sense in which history repeats itself; but it never does so without a difference, and insufficient attention to the differences makes history unintelligible. For, if there was no essential difference between the Roman world and our own, why should the one have perished before the other came into being?

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On this problem, the problem of the causes for the decay of ancient civilization, the book closes. The terms of the problem are keenly and penetratingly felt, and the criticism of many current solutions is conclusive. But if, as it seems to be, the problem is insoluble, ought we not to ask whether it is a genuine problem? Was the so-called collapse of ancient civilization really a collapse at all?

Professor Rostovtseff paints a black enough picture of the late Empire. Servility and oppression, gradual impoverishment and equality only in subjection, and the utter loss of creative energy—these are the main features of fourth-century life. Yet there is, surely, a reverse side to the medal. The author himself notes, as a strange exception to the general rule, that in the field of religion “the creative power of the ancient world was still alive, as is shown by such momentous achievements as the creation of the Christian church, the adaptation of Christian theology to the mental level of the higher classes, the creation of a powerful Christian literature and of a new Christian art.” And one cannot regard this as an isolated phenomenon. In architecture, for instance, Rivoira has pointed to the gradual and unbroken progress from the time of the early Empire down to the fourth century; certain qualities are lost, but others are gained; above all, there is a gain in pure constructional technique which, by the time we reach the Basilica of Constantine, has brought us to the verge of Gothic. In sculpture, again, it is true that the work of the first century was never again equalled in its own field; but when one looks at, for instance, the so-called “Diocletian” in the Capitoline Museum, one realizes that this brooding, inward-turned, art is no less creative, no less vigorous, no less free, than the fastidious and well-bred work of a more classical age. An “aristocratic,” refined, sensitive, cruel, civilization has turned into a “democratic” civilization, coarser in taste, less sensitive, but more humane, profounder in spiritual insight; but creative always; creative now not of the elegancies dear to an aristocracy whose luxury is based on the most brutal inequality of wealth, and whose feelings of pity and terror are purged by the constant sight of gladiatorial massacres, but of the clumsier, cruder things that express the mind, the “proletarian” mind if you will, of a society that feels matter as the veil of spirit. The change from the one to the other is necessarily catastrophic; and when one looks at the new, its politics, its art, its religion, or its philosophy, from the standpoint of the old, one thinks of the change as a decline and fall, and imagines that the creative energies of the human mind are exhausted. *E pur si muove*; the change is not death, but life.

R. G. COLLINGWOOD.

THE CAMBRIDGE ANCIENT HISTORY. Volume I of Plates, prepared by C. T. SELTMAN, M.A. Cambridge University Press. 1927. 25s.\*

The appearance of this volume gives an opportunity of calling our readers' attention to the progress of the History itself. Six volumes have now appeared. They cover the history of Europe and the Middle East from the earliest times to 301 B.C. The standard of scholarship is very high indeed. The work is divided into sections, each written by a specialist. The treatment is full, and there are maps and chronological tables. The information given is up-to-date and first hand. It is easy to criticize a great constructive achievement such as this; but in view of what has actually been accomplished, the critic must feel that his first duty is to congratulate editors, authors and publishers. After, thus humbly seconding the vote of thanks already accorded by

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\* The price of the first four volumes is 35s. each; volume five is 21s., and volume six 30s.



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acclamation, he may with an easier conscience discuss the scope and arrangement of the History.

As a work of reference it is invaluable. It is not too compressed; and when one turns to it for information about the events of a certain period one will usually find the supply adequate. It will seldom be necessary to dig deeper; but if it should be, the means of doing so is provided by the bibliographies. But an encyclopaedia is not a history. The arrangement is a compromise between the opposing, perhaps irreconcilable, claims of time, space and subject. There are breaches of continuity in the narrative even where development was in fact continuous. Well-documented periods are treated at great length; no doubt this is to some extent inevitable; but must the historian allow his artistic—constructive and selective—powers to be over-ruled by the demands of scientific encyclopaedism? There is a real danger that if this process continues much longer the writing of history will become a lost art or a performance before empty seats. Perhaps there will be two kinds of history books—those intended to be read and those to be consulted. Perhaps a current of fresh air, from some 'historical' Darwin, will winnow the chaff and lay bare the mechanism of human activities.

The volume of plates, 394 in number, necessarily reflects the arrangement of the volumes which it is designed to illustrate; but the student will welcome a corpus of ancient art such as has long been needed. It will be of even greater use to the archaeologist than to the historian, and it is complete in itself. It was a happy idea to publish illustrations thus in a separate form; one advantage of this method is that an adequate description of each can be given, and there is a great convenience in having these printed on the opposite page. All those who have had to do with illustrations will agree that Mr C. T. Seltman, the editor of this volume, has carried out a difficult task with success. Such technical blemishes as are evident are, for the most part, inevitable in a compilation of this kind. Not every museum, it seems, can take such good photographs as the British Museum; nor can the best results be expected when half-tones are printed upon ordinary paper. A certain smudginess results; but then art-paper is terribly heavy and expensive. Nevertheless we wish the authorities of the Louvre would re-photograph the Gebel-el-Arak knife-handle; that masterpiece of pre-dynastic Egyptian art appears more blurred each time it is reproduced. The Apollo of Veii (reproduced in the last number of *ANTIQUITY*) suffers from the curtailment of his stature to four inches; and we would gladly have sacrificed both the 'close-up' of his bust and the sarcophagus for the helmet showing him in the group designed by the artist. The prevailing fashion may allow a photographic view to be reduced to the size of four square inches—though, in the case of works of art, it is an insult to the artist; it may allow it on the grounds of space—that quantity is better than quality. But the editorial control should act independently of such secondary considerations. We emphasize this defect because the present volume suffers from it, and it is one that is generally overlooked or pardoned, though fatal to so many illustrated books. In our view, one large view or illustration is always preferable to two or more reduced beyond measure.

We must not, however, end on a note of criticism. The illustrations, with some exceptions, are admirably chosen. Amongst them are many supreme masterpieces, some of which are less familiar than they should be. From amongst those reproduced we mention the following, as examples of the rich fare provided:—The head of a Semite (p. 60; it seems almost incredible that of this object, "found by the American expedition to Bismya in Babylonia," it should have to be recorded that the "present locality [is] not known"); the famous iv-v Dynasty scribe of the Louvre (p. 82); the ivory and gold

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Cretan snake-goddess, now at Boston (p. 118); the Scythian bowman-vase of Kul Oba (p. 252), and other masterpieces of Graeco-Scythian workmanship; the stele of Aristion (p. 284); and the winged ibex, found in Armenia, which forms the handle of a silver vase in the Graeco-Persian style, which is now in the Louvre (p. 324).

THE BALEARICS AND THEIR PEOPLES. By FREDERICK CHAMBERLIN, LL.B., F.S.A. London: John Lane. 1927. pp. x, 261. 18s.

Mr Chamberlin's archaeological wares have been loudly advertised by articles in the English press, some accompanied by picturesque portraits of the writer, others by photographs of Minorcan monuments, as excellent as the statements they illustrated were surprising.

These devices are of course perfectly legitimate, and only too familiar, but it is very distasteful to find them employed in connexion with archaeology. In view of this publicity secured for the author's opinions—they have also been broadcast by the B.B.C.—and his very dogmatic attitude to those of other enquirers, including so competent an archaeologist as the late M. Émile Cartailhac, it is well that they should be examined.

So far as the early monuments of Majorca and Minorca are concerned, Mr Chamberlin deals almost exclusively with the *talayots* and the *taulas*. The *talayot* is a low tower, round or rectangular in plan and built of large dressed stones; the *taula* consists of a single stone 6–12 feet high which is placed upright and crowned by a horizontal stone to form a structure T shaped in section. The *taula* is surrounded at a distance of a few yards by a stone wall embodying large uprights and a doorway.

Each type of monument puzzles Mr Chamberlin very much. In connexion with them he claims to have "examine[d] the bibliography dealing with the monuments of every country and consult[ed] the living leading authorities" (p. 230). It is strange that his examination does not seem to have included the accounts of excavations of *talayots* in Majorca carried out within the last ten years by the Institut d'Estudis Catalans of Barcelona. Had it done so, much of his puzzlement might have been eased and he might have realized that the "closed" *talayot* is not as mysterious as he thinks. As it is, he says (p. 18) that "the problem of the *talayots* is today as if it had never been studied by anybody at any time."

Only one 'living leading authority' is quoted; (p. 217), "[the opinion] of so renowned a scholar as Sir Ernest A. Wallis Budge is of value—the greatest value that the world can offer,—After inspecting the photographs reproduced in this volume he immediately declared to me: 'It seems to me that you have found a new class of monument'; [why new? did not M. Cartailhac publish a large volume on them in 1892, profusely illustrated by photographs and plans?] 'and I have little doubt that the *talayots* are pyramids of a funereal nature, and that the *taulas* are altars for sacrifices or other funereal ceremonies.'"

This was courageous of Sir Ernest, but neither he nor Mr Chamberlin suggests how a "sacrifice" would be carried out on an altar perched on a single narrow support ten or twelve feet high (see plates 12–27). The same claim used to be made for dolmens; and these (like the celebrating priests) do seem to be 'in the air,' for Mr Chamberlin continues, "it is clear that archaeologists have found but two monuments to which the *talayot* can be compared—the nurhag (*i.e.*, the *nuraghi* of Sardinia) and the chambered cairns of Great Britain—and even these comparisons depended entirely upon the "supposition that the *talayot* had a chamber and, in the case of the *nurhag*, an interior



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"staircase. As the *talayot* possesses neither of these features, it must follow that there "is in all the world no megalithic monument similar to the *talayot*"—why? Moreover Mr Chamberlin has devoted the previous nine pages to detailed descriptions of *talayots* possessing "chambers" and "tunnels to summit."

The mention of British chambered cairns is intriguing. If the book contained any reference to the elaborate Majorcan burial caves at San Vicente and elsewhere (described by M. Cartailhac), some parallel might have been drawn. Surely it cannot be that Mr Chamberlin, or one of his (unquoted) authorities, is confusing chambered cairns with the *brochs* of Scotland? These last (which are nowhere mentioned), have a superficial likeness to *talayots*; but why chambered cairns?

"Cartailhac, rivalling Dr Guillemard for originality, deems these *taulas* to be the "central pieces of a building, altogether rejecting the otherwise universal agreement then "and now that these stately, magnificent, truly awful structures were altars of some "description" (p. 221).

There is, in fact, no reason for rejecting this suggestion by M. Cartailhac that the T was a centre post from which radiated the roof beams of a large chamber. It is supported by many plans, some shewing supplementary pillars between the *taula* and the outer wall, and the same method of roofing still exists in the contemporary artificial caves of both islands (plans and sections of some of these also have been published by M. Cartailhac and by the Institut d'Estudis Catalans). The early islanders seem to have made a practice of reproducing the same structural features in their chambers above ground as below, for, as M. Cartailhac shews, the plan of the tombs known as *navetas* or *naus* reproduces that of the burial caves. "There are perhaps a dozen *talayots* and "no *naus* or *taulas* in Majorca," (p. 174)—actually *talayots* abound and *naus* (or *navetas*) do occur, while it is at least probable that excavation of some of the sites would reveal the existence of "truly awful" *taulas* among the many remains of buildings that surround the *talayots*.

Had Mr Chamberlin visited some of these *talayot* sites in the large island, including those excavated by the Institut, he might have noticed that the surrounding areas are thickly strewn with fragments of pottery, some easily recognizable as Roman, others as certainly native. This pottery, although Mr Chamberlin does not mention the word, is the chief key to the problem. Some of the native varieties have already been recorded by the Institut, but we shall have to wait for a forthcoming publication in Barcelona for an authoritative account of it as a whole. Bronze implements have also been found associated with *talayots* (and duly recorded) and give further definite dates. Briefly, it has been established that the culture with which the *talayots* are associated extends from at least 1000 B.C. to the end of the Roman occupation of Majorca, and—*pace* Mr Chamberlin—that the *talayots* were towers for residence or defence.

Although Mr Chamberlin has completely failed to grasp the essentials of the *talayot* and other problems, his energy has placed upon the map a number of unrecorded monuments in Minorca and given us descriptions of the accessible features of many others whose existence was already known; even the most hard hearted and pernickety reviewer cannot rob him of this achievement. But was it necessary to devote a whole chapter to pouring scorn on a recent writer who has mistaken a bull-ring built of weathered stone for a Roman amphitheatre?

Certainly this book contains things that are true and things that are new;—but, alas! the things that are true are not new, and the things that are new are not true.

However, sentences like the following are at least refreshing (the subject is the



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town of Mahon) :—" Many an old inhabitant who had passed his whole life in one house " had never seen a blind opposite ajar. But the place is changing. Quite a number of " the windows in all streets are now discovering their panes—partly, to be sure, only ; " but still somewhat, which shows that the leaven of modern life is beginning to work."

W. J. HEMP.

RESEARCHES IN PREHISTORIC GALILEE. By F. TURVILLE PETRE, B.A., and a REPORT ON THE GALILEE SKULL. By Sir ARTHUR KEITH, F.R.S. pp. 119, 30 plates, 37 illustrations in text. Published by the British School of Archaeology in Jerusalem. 2 Hinde Street, W. 1. 1927. 42s.

The British School of Archaeology in Jerusalem was founded in 1920, and its inception is perhaps to be found in an idea propounded before the War, by the late Sir Charles Watson, who was then Chairman of the Palestine Exploration Fund, that the time had come for the establishment of some system by which students could be trained in Palestinian archaeology. Although the School has its headquarters in Jerusalem, it takes the whole of Palestine as its province. The present Chairman is Professor J. L. Myres, and the Director in Jerusalem is Mr J. W. Crowfoot.

There is no rivalry between the School and what may be considered the parent organization, the Palestine Exploration Fund. These bodies are, often in fact, in a position to help each other. Thus, the School uses the offices of the Fund in Hinde Street, and makes use of the services of its Assistant Secretary : on the other hand, at the present moment, the Director of the School, and the Assistant Director, Mr G. M. FitzGerald, are engaged in conducting the excavations which are now in progress on the western side of the Hill of Ophel in Jerusalem, for the Palestine Exploration Fund. It is probable that the two bodies, working separately, get more support from the public than a single combined body would do.

The book before us opens with a preface by Professor J. Garstang, who was, when it was written, Director of the School, as well as of the Department of Antiquities under the Government of Palestine. The operations in Galilee were under the direct charge of Mr Turville Petre, and the work in the field was carried out during 1925 and 1926.

The principal sites explored were two caves in the limestone rock ; one, the Mugharet-el-Emireh, in a bluff just outside the entrance to the ravine of the Wadi el Amud, and the other the Mugharet-el-Zuttiyeh in the same Wadi, a few hundred yards away. The Wadi in question opens out into the Plain of Genesereth, known to the Arabs as El-Ghuweir, on the north-west coast of the Sea of Galilee. In both caves flint implements of Mousterian technique were found ; the implements are admirably illustrated, and described. In both caves mineralized animal remains were found, associated with the palaeolithic flint implements. The animal remains are fully described by Miss Dorothea Bate ; they include fragments of bones of camel, rhinoceros, deer, gazelle, ibex, bison, horse, pig, hippopotamus, porcupine and other animals. Miss Bate remarks that the discovery of the bones of a rhinoceros in palaeolithic Palestine tends to do away with the difficulty found by Canon Tristram in identifying the Unicorn with this animal. Behemoth may be identified with the hippopotamus, and Miss Bate notes that one of these animals was killed near Damietta as recently as the year 1600, " since which time the northern limit of this animal's range has been pushed back to south of the First Cataract."

But the most interesting find was that of the now well-known Galilee skull. The

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fragments of this skull were found by Mr Turville Petre towards the bottom of the palaeolithic layer, at a depth of 2 metres below the modern floor level, towards the front of the cave Mugharet-el-Zuttiyeh. There was nothing in its position to suggest an intentional burial. "The bone itself is in a hard, highly mineralized state, extremely heavy and reddish in colour, in fact in every way similar to the other bone fragments found in the layer."

Sir Arthur Keith devotes more than fifty pages to a description and analysis of this skull. The greater part of his report is, of course, addressed to the expert; but there is much which the non-expert reader can study with profit. Sir Arthur states that "there can be no hesitation in assigning the person represented by the Galilee skull to the Neanderthal species of mankind and yet, as we shall see, there are details in which the Galilean type differs from the Neanderthal varieties which have been discovered in Europe hitherto." He considers the skull to be that of a woman. "This is the first time human remains of Moustierian date have been found outside the limits of Europe." He has no doubt as to the human status of the woman of Galilee, and thinks that she had reached the same intellectual plane as the aborigines of Australia. Those who desire to learn more about this most interesting human fragment may be referred to the report, which is very fully illustrated.

An appendix of a few pages gives an account of explorations in some caves in the neighbourhood of Lake Huleh, some fifteen miles to the north of the former sites. Generally the flints found here were Mesolithic. Pottery of early Iron Age, Bronze Age, I, II, and III, was also found. The potsherds were identified by Father H. Vincent, of the Ecole Biblique at Jerusalem.

In conclusion we must congratulate the British School on the admirable manner in which the volume has been edited and printed. The Council express their indebtedness to their honorary treasurer, Mr Robert Mond, for making it possible to publish this valuable report; type, paper and illustrations are alike excellent. C. F. CLOSE.

**DUNNIDEER AND ITS TRIPLE FORTRESSES.** By G. M. FRASER. W. Jolly and Sons Ltd., Aberdeen. 1927.

This little work of sixty-eight pages is less localized in its scope than its title might suggest. As regards the information concerning Dunnideer, however, it is singularly complete, and the "Mutual Improvement Society of the town of Inch" in Aberdeenshire were only justifying their titular function when they requested the author to reproduce a recent series of lectures on the subject in this form.

After dealing at some length with the anachronism, which has not hitherto received any notice, of which Shakespeare was guilty in *Macbeth* as regards the type of "fortress" existent in the time of the play, Mr Fraser proceeds to give a very readable description of a hilltop camp with earthen defences, a vitrified fort, and lastly a medieval ruin, all three of which crown the crest of the Hill of Dunnideer.

What might really be termed a separate essay on the process of artificial vitrification of forts in the north-east of Scotland in the late Celtic period will serve to clear up many obscure points of this knotty problem for Scottish as well as English readers.

Dr Fraser considers also the vexed question of the water-supply in hilltop camps, or "forts," as, for some reason, they are usually termed as soon as one crosses the Border. The considerable list of camps in the north-east of Scotland, the water-supply of which the author has traced to a particular well within the area, does not however help to

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elucidate the similar problem in the south of England, where no such wells are to be found save in one or two isolated examples.

When dealing with the races which preceded the early Iron Age, however, Dr Fraser is on less sure ground and certain of his inferences are open to question. Without specifying whether he refers to the Neolithic or the Bronze Age period he claims that the previous races were of a comparatively low type of civilization and were not attached to any particular place, but were in fact purely nomadic (p. 43). Again he refers to them (in this case generically as "Picts") as having been a people of "a low stage of culture." His primary reason for this assumption is that "one of their burial customs" was cremation burial within an urn, a method of burial which, it must be remembered, was common among the Romans at the highest stage of their culture, and is by no means rare among ourselves today. The second reason is that these earlier peoples had "reverence for standing stones." It would be a bigoted observer only, one would think, who could regard such a majestic example of civil engineering as Avebury circle and its attendant avenues and consider the builders as of "a low stage of culture." Were such an observer, however bigoted, to journey one mile to the north-west of the circle and examine the evidences of a relatively high stage of culture as exhibited by the excavations in the pre-Bronze-Age site of Windmill Hill (where it is not inherently improbable that the builders of Avebury lived) it is certain that his bigotry would depart from him. Mr Fraser claims further that the earlier races conferred no place-names upon any part of Scotland. Apart from the fact that it is quite impossible for any race to inhabit a country without utilizing place-names—however nomadic that race—there is no "proof" (the somewhat drastic word used by Mr Fraser) that they did not do so. The similar rarity of pre-Celtic names in the south of England might well be cited as an analogy. Subsequent races doubtless re-named most places and corrupted to their own use many more. To take but a single example, the great hill-top camp near Stockbridge is of early Iron Age date and was presumably called something by the race who built it. It appears in a Saxon charter of 976 by the Saxon name of Heanbyrig and is now known as Danebury. Finally, even Mr Fraser's claim that the art of fortification and incidentally of permanent dwelling was brought to Scotland by the race who built the turf-work on Dunnideer can hardly stand examination. Although he is careful to refer to the White Caterthun, the Brown Caterthun stands not far away, and the Brown Caterthun bears so strong a similarity, as the present reviewer observed three years ago, to the pre-Bronze Age site of Windmill Hill in Wiltshire as to render it practically certain that the two great enclosures were built by the same race, the structural peculiarities being unique and confined to that period. The fact that its present place-name includes a corruption of the Celtic word "Dun" need not, for the reason suggested above, be taken in any way as a "proof" of comparatively recent origin.

To the work under review is added an appendix on Shakespeare's anachronism referred to earlier, and the book terminates with a really excellent bibliography. Altogether it may be said that the district has received a valuable addition to its literature.

A. KEILLER.

ANCIENT CITIES AND MODERN TRIBES. By THOMAS GANN. London : Duckworth. 1926. 21s.

The lure and romance of a vanished civilization can easily be understood. Yucatan—that strange limestone plateau which juts out into the Gulf of Mexico—was once



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inhabited by people who could build lofty pyramids and temples ; but the Spanish Conquest, probably the most cruel and destructive ever recorded, annihilated every element of culture and substituted merely superstitious practices. The ruined Maya cities were inhabited only four centuries ago, and the language and writing could then have been learnt by any European ; but no one troubled to use the key now lost—perhaps irretrievably. Further, it is recorded that a certain bishop, Landa by name, collected and burnt in a single *auto da fé* all the native manuscripts which could be collected—"one of the most infamous acts ever committed by any human being" says Dr Gann. We agree, and regret all the more that Spain was never conquered by the Moors.

Dr Gann's book makes good reading. There is just enough neat archaeology to justify the present review, and more than enough of travel and adventure to hold the interest from start to finish. The author, too, has a good style, and a sense of humour—without which a sojourn in this part of Latin America would prove exasperating. That he is an enthusiast is evident ; who else could offer his body as a voluntary sacrifice to chiggers, mosquitos, beefworms, tabanidae flies and blood-sucking bats, to say nothing of the climate and hard living ! There must be some fascination in the Maya ruins which cannot be communicated by cold print and pictures. To those who are unfamiliar with them, they seem to be a dead end, and Maya art repellent in its ugliness. (But an individual judgment, based on copies of the originals, is of little value). Whatever we may think of the subject of the book, we have nothing but admiration for the pluck, determination and skill of those who are doing pioneer work out there—work whose scientific value is unquestionable.

The illustrations are well reproduced, but the figurines opposite p. 228 are too small to illustrate the points brought out in the text—the usual fault of excessive reduction, for which an author is not always responsible. The sketch-map on p. 18 has no scale and is inadequate. A large map is necessary to follow the author's route.

Dr Gann's book is a valuable anthropological record of existing conditions. He has a keen eye and, what is more, he records the essentials facts of his observations. His latest reports (published in the *Morning Post*) reveal important new discoveries in the country of the Santa Cruz Indians, and we shall eagerly look forward to his next book.

**IRON IN ANTIQUITY.** By J. NEWTON FRIEND, D.S.C. London : Charles Griffin and co. ltd. 1926. pp. viii, 221, frontispiece and 16 figs. 10s. 6d.

The title of this book suggests that it may be a useful compendium of the information available about the use of iron in early times, but it cannot be said to fill the bill. From the author, who is evidently primarily a scientist, we might have expected a large fund of knowledge on the metallurgy of ancient iron by way of analyses, descriptions of furnaces and the like ; but such information as he provides is meagre in the extreme. Failing this he has attempted a historical survey of the use of iron in which he ranges at will from prehistoric iron down to the cut steel jewelry of the eighteenth century (hardly antiquity). The book is arranged in a totally disconnected manner. After preliminary chapters on the Stone and Bronze Ages, followed by others on 'Iron and the Language,' 'as Ornament,' and, 'as Currency,' (the last containing a long and irrelevant excursion into the subject of water-clocks, always of copper or bronze), he jumps to 'Iron in Europe' with long quotations from classical writers and others almost longer from Pope's *Iliad* and *Odyssey*. These and similar quotations from Macaulay

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under 'Iron and the Romans' and from the Sagas in 'Iron and the Vikings' read suspiciously like padding. The important Hallstatt and la Tène periods are dismissed in three pages; the iron age in Italy in a bare paragraph. The objects from Spanish finds, from the Danish moor-finds and those of the early Anglo-Saxon period are never mentioned. In succeeding chapters on iron in Egypt, Syria, Mesopotamia and still further east no attempt has been made to arrive at any chronological sequence, or to discuss in all its bearings the question of the origins of iron-working in the ancient world. It is evident throughout that the author has not the necessary equipment for his task and the scantiest acquaintance with the literature. Far more knowledge is to be obtained from Déchelette's *Manuel d'Archéologie*, the articles on 'Eisen' in Ebert's *Reallexikon der Vorgeschichte* or 'Fer' in Daremberg and Saglio's *Dictionnaire des Antiquités*. A work of reference in English comprising the knowledge of the subject obtained from excavations by English and Continental archaeologists would have been very welcome. This book fails as such and is not retrieved by a full index. When, to quote but two of the extraordinary statements, we find it stated that in spite of the discoveries of the Siret brothers and numerous others in the Iberian Peninsula, Spain, like Africa outside of Egypt, passed directly from stone to iron, and that the mirrors found in association with chariot-burials of the iron age served the same purpose as the mirror of the modern motor-car, the value of the book may be gauged at once.

E. THURLOW LEEDS.

ANCIENT EGYPTIAN METALLURGY. By Major H. GARLAND and Professor C. O. BANNISTER. London: Charles Griffin and Co. Ltd. 1927. pp. xi, 214, frontispiece and 113 figs. 10s. 6d.

Professor Bannister has indeed deserved well of students, both of the historical and scientific aspects of ancient Egyptian metallurgy, in undertaking the publication of the fruits of the practical experience reaped by the late Major Garland in his capacity as superintendent of the laboratories at the Citadel, Cairo. The result is a work which within quite a small compass contains a large mass of information, much of it of a highly technical nature, on the methods of metal-working, particularly that of bronze, practised by the ancient Egyptians. An introductory chapter giving a brief historical survey of the metals known and the sources from which they were derived is curiously marred by several misspellings, such as 'disuetude,' 'collossal,' 'Memphic' for Memphite, and 'Ptolomies' and 'Ptolomaic' on the same page as the same words correctly spelled. And surely it would have been safer to use the perfectly good English term 'masterpieces' than to fall into the schoolboy howler 'chefs d'oeuvres.' Since the greater part of the material considered under the bronze industry appears to consist unquestionably of late pieces, such as statuettes and the like from the xxvith dynasty or later, when bronze-casting had reached a high standard, iron struts cannot be considered strange when iron was in common use. A case for the earlier use of the same method would have been strengthened by furnishing authoritative dates for the specimens. The term, 'an early Egyptian bronze' (p. 39), conveys nothing to the archaeological student. Chapter and verse for the term 'early' were clearly desirable. Omission of references and dates elsewhere tend to lessen the force of the author's arguments. It is not quite clear whether he did or did not believe that open moulds were used for casting the earliest copper implements. Apparently not, as he states that the copper was too impure. But open moulds for flat axes and daggers are well known from other countries, where the copper employed contained as many impurities as the dagger of which an

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analysis is given on p. 34. The Egyptian flat axes, like many of their counterparts from other lands, often have one face slightly convex and the other flat, undoubtedly the result of using open moulds. The chapter, however, contains many interesting observations on methods of casting and lays stress on the fact that the early Egyptians were quite ignorant of the processes of raising, spinning, annealing or brazing. Casting was the only method employed apart from a little cold hammering, and flaws were remedied by pouring in molten metal. On these points the author speaks with the authority derived from a profound microscopical study (set out at length in chapter v) of the metals themselves, which has served to prove that the changes which would have taken place in the microstructure of the metal under those processes are never found before Graeco-Roman times, and very rarely then.

The question of the age of iron in Egypt is here raised afresh. The author rejects on experimental grounds the idea that the splendid statues and other works in hard stones, for instance of the 19th dynasty, could have been produced with copper or bronze tools, again backing his arguments by microscopical evidence. But the case he advances for so early a use of iron implements is not strengthened by the instances he adduces. The use of iron struts in statuettes in the 22nd dynasty only proves that by that time iron was recognized as a more suitable medium, not that a different method had not previously been employed. It is difficult to believe that, if iron has survived, e.g., at Defenneh, in the Delta, in the shape of iron spears and arrows of c. 600 B.C., all traces of the stout chisels which he postulates as necessary for stone-working, even as far back as the third millennium, should have been lost. Even the author would have hardly dared to assume that iron tools were in use in pre- and proto-dynastic times when vessels were made of crystal and even harder materials such as corundum. It does not seem unreasonable to suppose that the methods employed for the manufacture of such vessels could have been applied on a larger scale to large masses, undoubtedly a laborious but not an impossible task.

We meet with bronze weapons engraved with the royal titles of Kames (18th dynasty) and Aah-hotep (19th dynasty) and had iron been in common use in their time, it hardly consorts with the petulant demand by Rameses II for a long-promised iron sword from the Hittite king or with the special mention of a tribute of iron from Syria in the 19th dynasty (c. 1350 B.C.) The author is on surer ground in his chapter on metallography, where he demonstrates to the full the importance of microscopical examination of metallic antiquities in any case where doubt exists as to the technical processes or the composition of the metal employed. The work concludes with some pages of useful hints on the preservation and restoration of Egyptian metal objects.

E. THURLOW LEEDS.

WANDERINGS IN ROMAN BRITAIN. By ARTHUR WEIGALL. London : Thornton Butterworth. 1926. pp. 341, map, 17 plates, and 60 line-illustrations. 6s.

To criticize Mr Weigall's *Wanderings* from the point of view of a scholar would be to mistake completely the end he has in view, and the public he desires to reach ; he does not profess to be a specialist, but only a compiler in whom the journalistic instinct is not repressed.

There are a few criticisms, however, which must be made in fairness both to Mr Weigall and his public, since, judging by the fact that the book has already attracted



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great attention and is now in its fourth impression, it is but reasonable to expect that there will be a second edition in which certain blemishes, which have no doubt occurred in the exigencies of daily newspaper writing, may be removed. Mr Weigall has already corrected some bad blunders which appeared in the articles, as for instance the confusion of Durobrivæ (Rochester, also Castor, in Northants), with Dubræ (Dover), and has modified some of his former misstatements, such as the assertion that Sorbiodunum (Old Sarum) "remained for over four centuries a great Roman town not less important than Venta (Winchester)." In reprinting, one or two small errors have crept in which must rather be laid at the door of the proof-reader than of the author; for example, on page 43, the dates of Tasciovanus should be from about 30 B.C. to 5 A.D., not 45 A.D., while "*calidarium*," on p. 300, should be "*caldarium*."

Without in the least blinding our eyes to the essentially "popular" nature of the book, we may be permitted to suggest that many needless newspaper vulgarisms might well have been eliminated. Some of them convey an entirely wrong impression; e.g. in speaking of a fine funerary urn at Letchworth (p. 95), he says that the Romans "often buried the ashes of their beloved dead in the soup-tureen or the salad-bowl or any handy pot or jar or glass decanter from the dining-room table." But perhaps his worst sin in this respect results from his efforts to carry that dangerous aid to knowledge, the modern parallel, too far. When we read of Friesians as "phlegmatic Dutchmen," other legionaries called Swiss, Tyrolese, Portuguese, etc., and the emperor Constantius described as a "Yugo-Slovak," it is time to call a halt. Mr Weigall's phrasing is equally loose in other matters; for instance, he speaks of the "Scotch rebellion" of 116 A.D., when he means the Pictish rising, and talks elsewhere of a legion being quartered in the Praetorium!

So much for the positive sins of commission; there are also some of omission, the most noticeable of which is the absence of any account of those great Romano-British potteries in whose work so much persistence of the Keltic strain is found—New Forest, Castor, and Upchurch, to say nothing of the imported Terra Sigillata. One is fully aware that in a book of this size, selection is necessary, but on the other hand, a whole chapter on the medieval dreams of Glastonbury is totally out of place.

M. PAUL DARE.

FLINTS: an illustrated manual of the Stone Age, for beginners [By REGINALD A. SMITH, Deputy Keeper of the Department of British and Medieval Antiquities at the British Museum]. Printed for the Trustees by John Johnson at the Oxford University Press. 1926. pp. 55, 32 illustrations. 6d.

Seldom has a better six-pennyworth been printed! Here is the answer to all those who ask (when perhaps a gem of prehistoric flint-work is being shown to them) "How do you know it is worked?" The question is sometimes disconcerting, and like most of its kind it cannot be answered in a few words; but to all such we shall in future reply—get this handbook. For the convenience of those who wish to do so at once, we add that it may be obtained by post from the Secretary of the British Museum or through any bookseller.

Explanations are given of all the common features of flint-fracture—the bulb of percussion, striking-platform, frost-chipping and the like;—of cores and flakes and their functions in the production of implements; and of natural curiosities such as iron-staining and gloss. We are glad that Mr Smith gives what is undoubtedly the correct explanation of the iron-spotting which is so common

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on some worked flints, namely that it is due to the formation and subsequent rusting of small mounds or crystals of iron. These have been observed on flints found in undisturbed brickearth, and, though somewhat similar marks may be produced by contact with horse-shoes or agricultural tools, such agents cannot deposit an iron crystal. The gloss peculiar to certain gravel deposits (Knowle Pit in Savernake Forest, Walker's Hill in Alton Priors, and Collingbourne Wood, all in Wilts) remains a mystery; but we suspect wind-blown dust or sand to be responsible. The somewhat similar polish on the edges of flint saws is not referred to. The explanation given on p. 266 of this number is perhaps worth noting in the next edition. The "simple test for borers" given on p. 30 is new to us and well worth attention. On p. 34 the writer confesses that he cannot suggest a use for flakes from small tortoise-cores. Some of the pygmies illustrated on p. 41 may have been intended as barbs for harpoons. A row of several was found in Yorkshire arranged at regular intervals as would have occurred if the wooden shaft had decayed.

There are some general notes on how to collect and label specimens, patination, types of celts and arrowheads, river-terraces, the importance of stratification and of accurate observation of finds, and a list of the principal public collections. This last item might well be expanded, and we commend the suggestion to the Museums Association, whose useful Directory, printed in 1911, has long been out of date and unobtainable.

**DIE JÜNGERE STEINZEIT DER SCHWEIZ.** By HANS REINERTH. Benno Filser, Augsburg. 1926. pp. 288, 95 figs., 8 maps. 30 marks.

**URGESCHICHTE DER SCHWEIZ.** By O. TSCHUMI. Von Huber & Co., Frauenfeld. pp. 192, 20 plates, 6 figs.

Almost every museum contains some "relics from the Swiss lake-dwellings"; nearly every book about early man figures a reconstructed pile-village. But these remains and reconstructions date from a time when archaeology and ethnography were alike immature. Since 1900, and especially since the war, much fresh work has been done by geologists, excavators and explorers that must revolutionize our views about pre-historic Switzerland and the life of its inhabitants. The two works before us present, for the first time, the results of modern research in a form serviceable alike to the specialist and the layman.

"The New Stone Age of Switzerland" is clear, succinct, well-written and printed in Roman type. Reinertth recapitulates in graphic style the realistic details derived from older investigators and their successors about the daily life of the lake-dwellers—the looms, their ovens, the very bread they ate—that lend the Stone Age of Switzerland its peculiar vividness and charm. He adds in an appendix the scientific names and sites of discovery of their plants and animals. But these details are here presented for the first time in a truly historical context.

The civilization of the pile-dwellings is depicted as the resultant of the interaction of two cultural streams conditioned by the changes of climate and vegetation attested by palaeontology and geology. The first current, characterized above all by celts made from hard river pebbles, came from the south-west. The second, distinguished by celts sawn out of blocks of softer rock, came immediately from the north-east. The pile-dwellers, instead of being fatherless invaders emerging mysteriously out of some nameless



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and unknown land, are thus connected with well-defined groups whose earlier history can be traced on the western Mediterranean coasts or on the upper Danube.

The reviewer has in the past doubted the reality or importance of Reinerth's western group. He takes this opportunity of disavowing his former scepticism. The western element is in fact attested by a number of traits, not all enumerated by Reinerth.

More revolutionary is the author's view of the pile-dwellings themselves. These stood, according to him, not over the open waters of the lakes but on the shore—a theory propounded independently by Vouga five years ago.\*

It would be possible to criticize Reinerth's conclusions on points of detail. For instance, as in earlier and less mature works, he still insists on the form of the celts as vital, rather than the method of manufacture which, as he now recognizes, conditioned the form. Under the spell of this external typology he connects the sawn celts with their rectangular cross-section with the Scandinavian-Nordic series of flint celts that have indeed a similar section, but are manufactured by an entirely different method. Nor did the theory of pile-dwellings on the shore escape very searching and pertinent criticism at the Salzburg anthropological congress.

Still the book as a whole is a masterly and original contribution to our knowledge. No one can in future afford to write about early man or arrange a museum without reading it carefully. And if it make him tear up his stock drawings and smash his models of lake-villages, the Urgeschichtliches Institut of Tübingen will provide better and truer ones.

Those who want a cheaper but more extensive survey, may profitably read Tschumi's very objective book. It covers the whole period from palaeolithic to Roman times, but the picture lacks both the detail and the clear-cult outlines of Reinerth's. The best chapter is the last, where Tschumi opens up new ground in tentatively correlating popular legends with archaeological facts—the "Golden Age" with the post-glacial optimum of climate revealed by the geologists, or tales of dwarfs with the "pigmy" skeletons unearthed in a neolithic context.

V. GORDON CHILDE.

**PFAHLBAUTEN: ZEHNTER BERICHT.** By Dr D. VIOLLIER, Konservator K. SULZBERGER, Dr P. EMANUEL SCHERER, O.S.B., Prof. Dr O. SCHLAGINHAUFEN, Prof. Dr K. HESCHELER and Dr E. NEUWEILER. Zürich: Bureau der Antiquarischen Gesellschaft im Schweizerischen Landesmuseum in Zürich. 1924. pp. 120, 20 illustrations and 15 plates. 8 francs.

The new work done on the Swiss pile-dwellings<sup>1</sup> during recent years, based on stratigraphical observations, is of the utmost importance to archaeologists. Dr Viollier, in a valuable introduction to this report, on "the present position of research on the Pile-dwellings of Switzerland," while deploring the lack of method in the earlier investigations, which too often resulted only in the stuffing of museum cases and the accumulation of "interesting" private collections, ably champions the cause of modern scientific research. His own work in east Switzerland, with that of Vouga in Lake Neuchâtel and Reinerth and Schmidt elsewhere, has contributed largely to the establishment of a permanent scheme of relative chronology; and while the centuries immediately preceding the period of the earliest pile-dwellings in Switzerland are still "long and obscure," this report brings much new knowledge to bear upon the problem of the

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\* M. Vouga's conclusions will be given in his forthcoming article in *ANTIQUITY*. Ed.



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collapse of the pile-dwellings during that other transition phase between the Bronze and Iron Ages.

Who were the pile-dwelling people, and where did they come from? There appears still to be no satisfactory answer to the question, although the first workers were not in the least daunted by the difficulties of the problem. We are not told whence the elements of neolithic civilization, which appears already well developed in the earliest pile-dwellings, penetrated into Switzerland, but one suspects that the author looks towards the south or west, rather than to the Danubian civilization, for the source.

Until recently it was commonly held that the lake-villages were erected in the water, the present-day exposed positions of most of the neolithic stations of Lake Neuchâtel being ascribed to the artificial lowering of the lake level between the years 1880 and 1888. But apart from the practical difficulties involved in sinking thousands of piles, some of them 10 metres long, in water, and the dangers of storms and high waves, the nature of the material (e.g. the numerous objects of wood) preserved in the neolithic layers shows that the dwellings could not have stood in the water. The Neolithic and Bronze Ages were marked by long and severe drought, and the level of the lakes must have been considerably lower than today. Gams and Nordhagen have shown this; and Vouga supports it from detailed observations on the deposits around Lake Neuchâtel. We are given a picture of the inhabitants following the retreating shores, sometimes, as Weber has shown, for hundreds of metres, though not without occasional minor retrogressions.

Most of the late Bronze Age stations are situated, today, further out in the water; but while Viollier says they were still erected on the lake-shore, Vouga (*L'Anthropologie*, xxxiii, 1923) thinks that, in Neuchâtel at least, the stations were placed in the open lake. The statement that the type of settlement, from being strung out along the shore, becomes, in the Bronze Age, a compact village making use of the exposed and dried-up shores for agriculture, is significant in its possible relation to the evolution of the "valley village" with its common fields. A rise in the level of the latter during the first Iron Age, consequent upon a deterioration of climate, is held to account for the desertion of the pile-dwellings.

An analysis of the structural differences between the two types of settlement, Packwerkbauten (platforms) and Pfahlbauten (pile-dwellings), follows. The former type, better known examples of which exist in south Germany, occurs only in bogs and peat deposits. They are not exclusively neolithic, for an important dwelling of the platform type, excavated in 1923 in the Riesi, belongs to the late Bronze or even the early Iron Age (p. 73). A general account of the material cultures of the lake-dwellings concludes the first section (A) of this report.

Section B, which takes up 60 pages, consists of an inventory of the swamps and lake-settlements of east and central Switzerland, with a bibliography of every station and an account of recent excavations carried out on several: e.g., Thayngen-Weiher (neolithic), Hausensee-Ossingen (neolithic), Greifensee-Storen (neolithic) and Zürichsee-Alpenguai (Bronze Age). The last-named, excavated mainly in 1919, is treated in pages 44—54 and plates II—XI. The conclusions reached by Dr Viollier are very important for those who would see in the collapse of the lake-dwellings a clue to the series of "invasions" which reached Britain during the first half of the first millennium B.C. The final desertion of the settlement took place about the middle of the first Iron Age, about 800 B.C., "or perhaps even later." Evidence is cited to prove this overlap. The date of certain objects of the Italian Iron Age, found in the Alpenguai village, is known, and helps to fix the absolute chronology. Not only does red and



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black painted ware of Hallstatt type occur, but some thistle-headed pins (*à tête de pavot*) were found to be of iron, and this metal was also used as filling for certain grooved wire bracelets of bronze. The finding of a "bird-vase" of a well-known type (pl. VII, 4) is interesting as indicating links with Illyria.

Bronzes include winged axes of the usual Swiss type, razors, socketed gauges and chisels, tanged knives, sickles, spear-heads, fish hooks, buttons, horse-bits, bowls and the customary large numbers of pins, but no daggers and only two portions of a sword blade. It may be that, since the settlement appears to have been abandoned more or less voluntarily, the occupiers took with them their most precious possessions, particularly their swords. The numbers of bronze tools were in any case comparatively small, especially in the latest layers.

An account of "the Anthropological Finds of the Swiss Pile-dwellings" by Professor Schlaginhaufen, includes detailed measurements of all the known skulls, with illustrations and a valuable bibliography. Finally, Prof. Hescheler analyses the fauna and Dr Neuweiler the flora of both periods of inhabitation of the lakes.

The fifteen excellent plates show examples of bronzes, woodwork, pottery (with details of different kinds of ornamentation) moulds and other finds.

This book deserves attention for its careful summary of our existing knowledge of the pile-dwelling cultures but particularly for its useful attempt to throw light on some of the obscure problems connected with the rise and fall of those cultures.

ESTYN EVANS.

AZ AVRKORI MŰIPAR MAGYARORSZÁGON (DAS KUNSTGEWERBE DER AVARENZEIT IN UNGARN). By NANDOR FETTICH. In Magyar with a German translation. Kiralyi Magyar Egyetemi Nyomda, Budapest. 1926. pp. 66, 7 pls. and 22 figs. 14.80 marks.

This, the first of a new series of publications issuing from the National Hungarian Museum and intended to make better known the riches of Hungarian antiquities, deals with questions of the Hunnish and Avar cultures. The larger part of the work is devoted to a discussion of a peculiar feature, translated as *Zahnschnitt* in the German text, which appears commonly in the zoomorphic ornament of the Avar period of the 6th and 7th centuries A.D. That it is not to be sought in any legacy from the Hunnish period is demonstrated by the marked divergence of the Hunnish ornamental motives, which are also as short-lived as the occupation of Hungary by their users. In further search for an origin for this peculiar element of the Avar decoration the case for a loan from the west-Germanic canon known as Salin's Style II is first examined. The author sets out the arguments for this source in detail, but discards it in favour of a derivation from Scythic art. Here he follows the line adopted by Strykowski, Rostovtseff and others in maintaining the important influences of Scythic motives on the art of western Europe in the early centuries of our era. This line runs counter to the provincial Roman origin of Teutonic ornament advanced by Salin and supported by other Scandinavian scholars. Here we meet again the struggle of East and West and we can only quote the conclusions of the author of the present work. "Among the barbaric peoples of the Migration period there can be no talk of a specific national art. A purely Scythic, Sarmatic, Hunnish, or Avar artistic school did not exist. The artistic products of these peoples were a nomad art, blended from various elements." So in the West there is no question of unmixed oriental motives. The migrations brought much, as



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many features of Salin's Style II in particular clearly prove, but the northern Teutonic races equally borrowed ideas from all their neighbours. Just as the Huns are shown to have been influenced in part by Byzantine motives, so the Teutonic peoples derived much from the Roman world, with which they still had commercial relations. If the late Anglo-Saxon smith of the Wallingford sword could translate the lion of St. Mark among the four Christian emblems on the pommel—of which the three others are clearly recognizable—into an interlaced monster akin to some Irish zoomorphs, there is nothing strange in the idea that his ancestors should have equally transmogrified an earlier motive borrowed from Roman provincial sources, even though the line of change may have been influenced by ideas to which the East also contributed.

The work is printed in good, clear type and is well illustrated. The references to illustrations on page 59, l. 9, should be Nr. 8, and on page 60 the first two plate-numbers in brackets should be 12 instead of 11. These are errors taken over from the original Magyar text. E. THURLOW LEEDS.

THE CREDIBILITY OF HERODOTUS' ACCOUNT OF EGYPT. By W. SPIEGELBERG. Translated by A. M. Blackman. Blackwell. 1927. pp. 40, 2 pl. 2s. 6d.

Poor Herodotus! The very title of the pamphlet is an insult; we do not talk of the credibility of Polybius, and his great predecessor was quite as careful, with his precision as to what he heard, and how much he believed of it. An early British traveller in China was just as likely to be mistaken. Happily Dr Spiegelberg takes a reasonable view and considers the sources of information, and the difficulty of such a traveller getting at the truth. The rendering of the times and conditions of writing the incomparable Second Book is excellent, and vouched for by Dr Spiegelberg's long studies in the Demotic period. But in one point it is regrettable that neither author nor translator has done justice, when referring to an inversion of the order of history. Dr Apostolides pointed out in 1898 that there had been a reversal in the order of two rolls, sections 100-123 and 124-136 (*L'Hellénisme Egyptien*). When these sections are transposed the order of history is faultless. I further pointed out (*Jour. Hellen. Stud.* 28, 275) that there were breaks of subject all through the second book at about the same length of interval, and that the Egyptian book consisted of twelve rolls, varying from 207 to 236 lines of the Greek of Prof. Sayce's edition. Somewhat the same size of roll can be traced in other books. FLINDERS PETRIE.

FLYING FOR AIR-SURVEY PHOTOGRAPHY. By F. TYMMS, M.C., A.F.R.A.C.S. and Flight Lieutenant C. PORRI, R.A.F., Members of the Air Survey Committee. H.M. Stationery Office. 1927. 2s.

We need hardly apologize for noticing this handbook, though it only concerns archaeology indirectly. (We do not intend to *review* it). Its scope is indicated by the title; and the contents will show that the taking of air-photographs is not quite as simple and easy as it sometimes appears. When these are required for the purpose of constructing or correcting a map, the art of air-photography becomes exceedingly difficult. We can thoroughly recommend this authoritative handbook to all who contemplate taking air-photographs.